PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
ARP2437

AUDIO/VIDEO STEREO RECEIVER

VSX-451

KUC, KUC/CA

- **Refer to the service manual ARP2263 for VSX – 4900S/KUC.**
- **This manual is applicable to VSX – 451/KUC and KUC/CA.**

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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DFF MAR. 1992 Printed in Japan

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- *Part without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

VSX – 451/KUC, KUC/CA and VSX – 4900S/KUC have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		VSX – 4900S/ KUC type	VSX – 451/ KUC type	VSX – 451/ KUC/CA type	
◉	AF assembly	AWZ3605	AWZ4121	AWZ4121	
◉	VR assembly	AWZ3599	AWZ4123	AWZ4123	
	SB. TR assembly	Non supply	Non supply	Non supply	*1
⚠	Q3, Q4 Transistor	2SA1302	2SA1264N	2SA1264N	
⚠	Q1, Q2 Transistor	2SC3281	2SC3181N	2SC3181N	
⚠	Power transformer	ATS1353	ATS1407	ATS1407	
⚠	FU1 Fuse (8A/125V)	AEK1002	....	....	
⚠	FU1 Fuse (6.3A/125V)	....	AEK – 309	AEK – 309	
	Master VOL assembly	AAB1119	AAB1207	AAB1207	
	Name plate (metal)	....	AAM1029	AAM1029	
	Badge	Non supply	....	....	
	Front panel (PLS)	AMB1892	AMB1954	AMB1954	
	Terminal screw	AKE – 031	....	....	
	Screw	....	ABA – 222	ABA – 222	For rear panel
	Packing case	AHD2028	AHD2239	AHD2239	
	FM antenna	ADH1004	ADH1008	ADH1008	
	Operating instructions (English)	ARB1318	ARB1359	ARB1359	
	Operating instructions (French)	....	....	ARC1350	
	Remote control unit (CU – VSX025)	AXD1206	....	....	
	Remote control unit (CU – VSX044)	....	AXD1262	AXD1262	
	Battery cover	....	AZN2183	AZN2183	

*1 : SB. TR assemblies of VSX – 451/KUC and KUC/CA types are the same.

◉ AF ASSEMBLY (AWZ4121)

AF assembly (AWZ4121) and AF assembly (AWZ3605) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ3605	AWZ4121	
	IC105, IC108	M5220P	RC4558DXP	
	C301, C302 (8200/71)	ACH1204	....	
	C301, C302 (8200/63)	....	ACH1044	
	C311 (47000/5.5V)	ACH1037	ACH1135	

◉ VR ASSEMBLY (AWZ4123)

VR assembly (AWZ4123) and VR assembly (AWZ3599) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ3599	AWZ4123	
	IC202	M5220P	RC4558DXP	

SB. TR ASSEMBLY

SB. TR assembly (VSX – 451/KUC and KUC/CA) and SB. TR assembly (VSX – 4900S/KUC) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		VSX – 4900S/KUC	VSX – 451/KUC, KUC/CA	
⚠	R701 (2.2M, 1/2W)	ACN – 209	ACN – 208	
⚠	AC outlet (3P)	AKP1053	....	
⚠	AC outlet (1P)	....	AKP1078	SWITCHED

PIONEER
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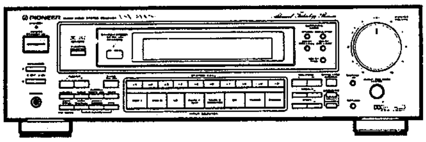
• Illustration shows model VSX-4900S.

ORDER NO.
ARP2263

AUDIO/VIDEO STEREO RECEIVER

VSX-4900S
VSX-4800
VSX-51
VSX-4950S

VSX−4900S, VSX−4800, VSX−51 AND VSX−4950S HAVE THE FOLLOWING :

Type	Model				Power Requirement	Remarks
	VSX−4900S	VSX−4800	VSX−51	VSX−4950S		
KUC	○	○	—	—	AC120V only	
KU	—	—	○	—	AC120V only	
KC	—	—	—	○	AC120V only	
SD	—	○	—	—	AC110V, 120V−127V, 220V, 240V (switchable)	

- **This manual is applicable to the VSX−4900S/KUC, VSX−4800/KUC, SD, VSX−51/KU and VSX−4950S/KC types.**
- **As to the VSX−4800/KUC, SD, VSX−51/KU and VSX−4950S/KC types, refer to pages 71−74.**

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YV MAY 1991 Printed in Japan

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SAFETY INFORMATION

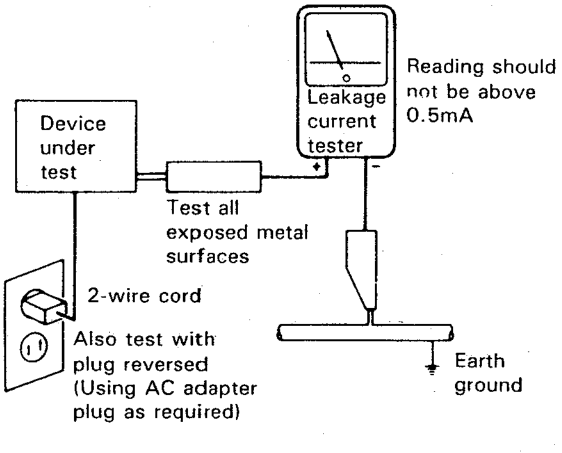
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Device under test
Leakage current tester
Reading should not be above 0.5mA
+
-
Test all exposed metal surfaces
2-wire cord
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. SPECIFICATIONS

Amplifier section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.05 % total harmonic distortion (front).**

Continuous power output	
(Rear only driven)	18 W + 18 W (1 kHz, T.H.D. 0.08 %**, 8 Ω)
(Center only driven)	
VSX-4800, VSX-4900S	20 W (1 kHz, 8 Ω)
VSX-4950S, VSX-51	25 W (1 kHz, 8 Ω)
Dynamic Power (2 Ω/4 Ω)	280 W/260 W
Input (Sensitivity/Impedance)	
PHONO MM	2.5 mV/47 kΩ
CD, TAPE 1/DAT, TAPE 2, LD, VCR 1, VCR 2	150 mV/47 kΩ
Phono Overload Level (T.H.D. 0.1 %, 1 kHz)**	
PHONO MM	130 mV
Frequency Response	
PHONO MM	20 Hz to 20,000 Hz ±0.3 dB
CD, TAPE 1/DAT, TAPE 2, LD, VCR 1, VCR 2	5 Hz to 70,000 Hz $^{+0}_{-3}$ dB
Output (Level/Impedance)	
TAPE 1/DAT REC, TAPE 2 REC	150 mV/2.2 kΩ
VCR 1 OUT, VCR 2 OUT	150 mV/2.2 kΩ
Tone Control	
BASS	±8 dB (100 Hz)
TREBLE	±8 dB (10 kHz)
Loudness Contour	6 dB (100 Hz) 3 dB (10 kHz)
Signal-to-Noise Ratio (IHF, short circuited, A network)	
PHONO MM	75 dB
CD, TAPE 1/DAT, TAPE 2, LD, VCR 1, VCR 2	97 dB
Signal-to-Noise Ratio [EIA, at 1 W (1 kHz)]	
PHONO MM	77 dB
CD, TAPE 1/DAT, TAPE 2, LD, VCR 1, VCR 2	80 dB

* ***Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.***

** ***Measured by Audio Spectrum Analyzer.***

VIDEO Section

Input (Sensitivity/Impedance)	
VCR 1, VCR 2, LD	1 Vp-p/75 Ω
Output (Level/Impedance)	
VCR 1, VCR 2, MONITOR	1 Vp-p/75 Ω
Frequency Response	
VCR 1, VCR 2, LD → MONITOR	5 Hz – 10 MHz $^{+0}_{-3}$ dB
Signal to Noise Ratio	55 dB
Cross Talk	55 dB

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzene, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

FM Tuner Section

Frequency Range	87.5 MHz to 108 MHz
Usable Sensitivity	Mono; 10.8 dBf, IHF (0.95 μV/75 Ω)
50 dB Quieting Sensitivity	Mono; 15.3 dBf, (1.6 μV/75 Ω) Stereo; 37.0 dBf, (19.5 μV/75 Ω)
Signal-to-Noise Ratio	Mono; 80 dB (at 65 dBf) Stereo; 76 dB (at 85 dBf)
Distortion	Mono; 0.2 % (1 kHz) Stereo; 0.3 % (1 kHz)
Capture Ratio	1 dB
Alternate Channel Selectivity	65 dB (400 kHz)
Stereo Separation	45 dB (1 kHz)
Frequency Response	30 Hz to 15 kHz $(^{+0.5}_{-2.0})$ dB
Image Interference Ratio	50 dB
IF Interference Ratio	80 dB
Antenna Input	300 Ω balanced 75 Ω unbalanced

AM Tuner Section

Frequency range	
With 9 kHz step	531 kHz – 1,602 kHz
With 10 kHz step	530 kHz – 1,700 kHz
Sensitivity (IHF, Loop antenna)	300 μV/m
Selectivity	25 dB
Signal-to-Noise Ratio	50 dB
Antenna	Loop antenna

Miscellaneous

Power requirements	
U.S. and Canadian mdels	AC 120V, 60 Hz
Multi-voltage model	AC 110 V/120 – 127 V/220 V/240 V (Switchable), 50/60 Hz
Power consumption	
U.S. and Canadian models	420 W, 550 VA
Multi-voltage model	660 W
In standby condition	3 W
AC Outlets	
U.S. and Canadian models	
SWITCHED x 2	TOTAL 100 W (0.8 A) MAX
UNSWITCHED x 1	200 W (1.6 A) MAX
Multi-voltage model	
SWITCHED x 2	TOTAL 100 W MAX
UNSWITCHED x 1	100 W MAX
Dimensions	420 (W) x 125 (H) x 334 (D) mm 16-7/16 (W) x 4-15/16 (H) x 13-1/8 (D) in
Weight (without package)	9 kg (19 lb 14 oz)

Furnished Parts

FM T-type antenna	1
AM Loop antenna	1
Dry cell batteries	
VSX-4900S/VSX-4950S/VSX-51: size "AA" (IEC LR6/AM-3) Alkaline	2
VSX-4800: size "AAA" (IEC R03/UM-4)	2
Remote control unit	1
Operating Instructions	1

NOTE:

Specifications and the design subject to possible modifications without notice due to improvements.

3. EXPLODED VIEWS, PACKING AND PARTS LIST

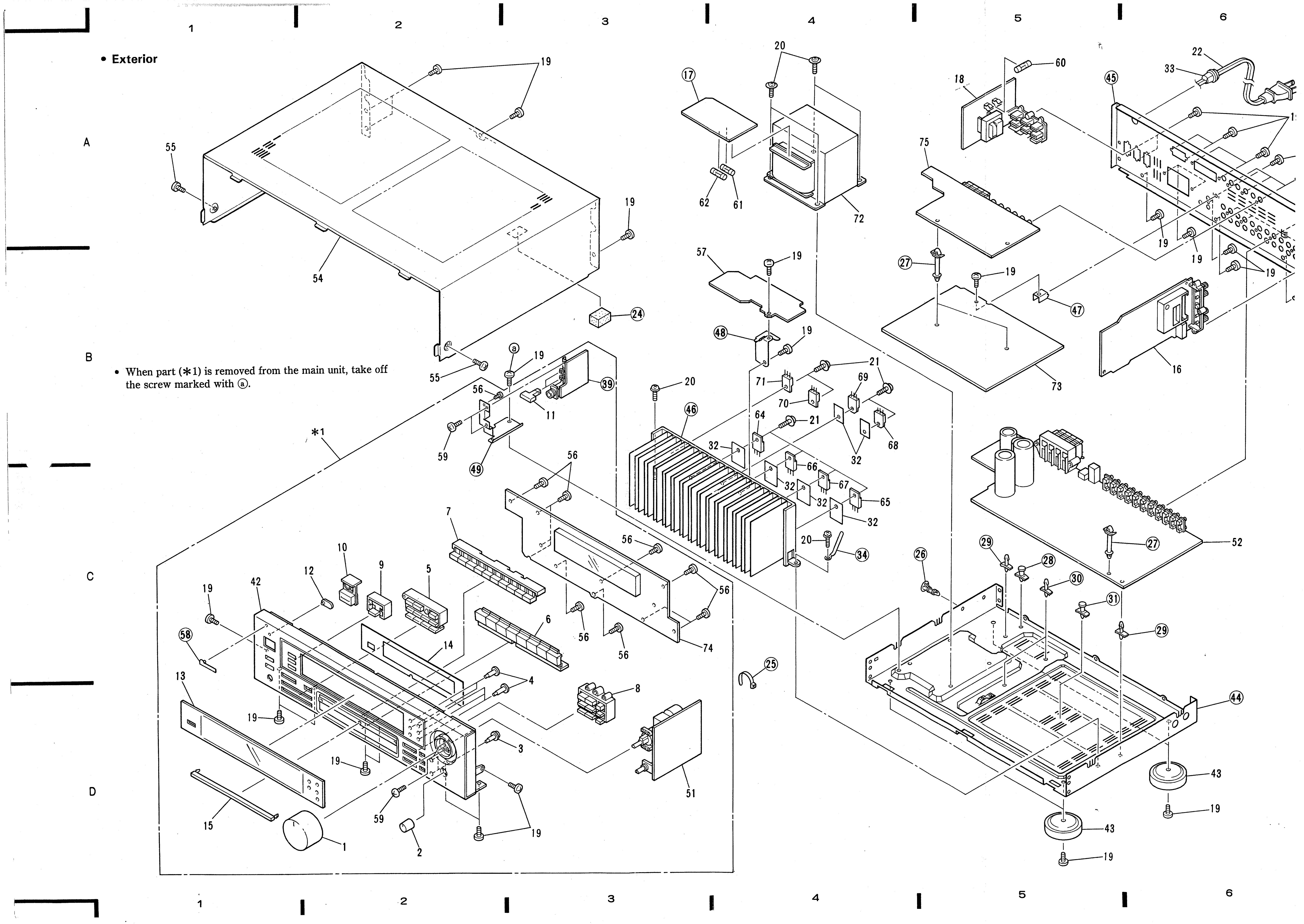
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts list of Exterior and Packing

Mark	No.	Description	Parts No.
	1	MASTER VOL ASSY (VOLUME)	AAB1119
	2	ROTARY KNOB (INPUT BALANCE)	AAB1133
	3	LIGHT ACTION KNOB (MUTING, RETURN)	AAD1398
	4	KIN BUTTON (SURROUND MODE, DERAL TIME)	AAD1609
	5	BAND BUTTON	AAD1993
	6	FUNCTION KNOB	AAD1994
	7	STATION KNOB	AAD1995
	8	TONE BALANCE BUTTON (PLS)	AAD1996
	9	M & S KNOB	AAD1997
	10	KNOB (POWER)	AAD1998
	11	SPEAKER KNOB	AAD1999
	12	LENS	AAK1443
	13	PVC PANEL	AAK2141
	14	FL FILTER	AAK2142
	15	SASH (PLS)	AAP1162
⊙	16	TUNER ASSEMBLY	AWE1140
	17	TRANS ASSEMBLY	
	18	SB. TR ASSEMBLY	
	19	SCREW	ABA−298
	20	SCREW	ABA1054
	21	SCREW	ABA1082
	22	AC POWER CORD	ADG1058
	23	FM ANTENNA	ADH1004
	24	CUSHION M (RUBBER)	
	25	NYLON BINDER	
	26	PCB HOLDER	
	27	CUSHION	
	28	PCB SPACER	
	29	PCB SPACER	
	30	PCB SUPPORT	
	31	PCB SUPPORT	
	32	SHEET	AEE1014
	33	CORD STOPPER	AEP−113
	34	CLAMPER	
	35	DRY CELL BATTERY (LR6, AA)	
	36	FRONT PAD	AHA1336
	37	REAR PAD	AHA1337
	38	PACKING CASE	AHD2028
	39	SW ASSEMBLY	
	40	PACKING SHEET	AHG1016
	41	TERMINAL SCREW	
	42	FRONT PANEL	AMB1831
	43	INSULATOR ASSEMBLY	AMR2140
	44	CHASSIS	
	45	REAR PANEL	
	46	HEAT SINK	
	47	PCB HOLDER	
	48	PCB SUPPORT	
	49	PCB INDICATOR HOLDER	
	50	OPERATING INSTRUCTIONS	ARB1318
⊙	51	VR ASSEMBLY	AWZ3599
⊙	52	AF ASSEMBLY	AWZ3605
	53	REMOTE CONTROL UNIT (CU-VSX025)	AXD1206
	54	METAL BONNET	AZN1783
	55	SCREW	BBT30P060FZK
	56	SCREW	BPZ26P080FMC
⊙	57	C/S AMP ASSEMBLY	AWZ3604
	58	NAME PLATE	
	59	SCREW	VMZ30P060FCU
⚠	60	FUSE (8A, FU1)	AEK1002
⚠	61	FUSE (4A, FU3)	AEK−125
⚠	62	FUSE (4A, FU4)	AEK−125
	63	LOOP ANTENNA (L)	ATB1005
⚠	64	TRANSISTOR (Q1)	2SC3281
⚠	65	TRANSISTOR (Q2)	2SC3281
⚠	66	TRANSISTOR (Q3)	2SA1302
⚠	67	TRANSISTOR (Q4)	2SA1302
⚠	68	TRANSISTOR (Q5)	2SC3180N
⚠	69	TRANSISTOR (Q6)	2SA1263N
⚠	70	TRANSISTOR (Q7)	2SD1276A
⚠	71	TRANSISTOR (Q8)	2SB950A
⚠	72	POWER TRANSFORMER	ATS1353
⊙	73	SUR ASSEMBLY	AWZ3606
⊙	74	FL ASSEMBLY	AWZ3607
⊙	75	V/SP ASSEMBLY	AWZ3608
	76	SPACER	AHB1069

- **Exterior**


1
2
3
4
5
6
A
B
C
D
19
55
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24
17
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61
72
57
19
48
19
60
18
75
27
19
47
73
22
33
45
19
19
19
16
a
19
39
56
11
59
49
*1
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46
21
71
70
69
64
21
32
68
32
66
67
65
32
32
32
20
34
56
7
56
74
56
56
10
12
9
5
6
19
42
58
14
4
8
13
19
3
19
51
15
1
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2
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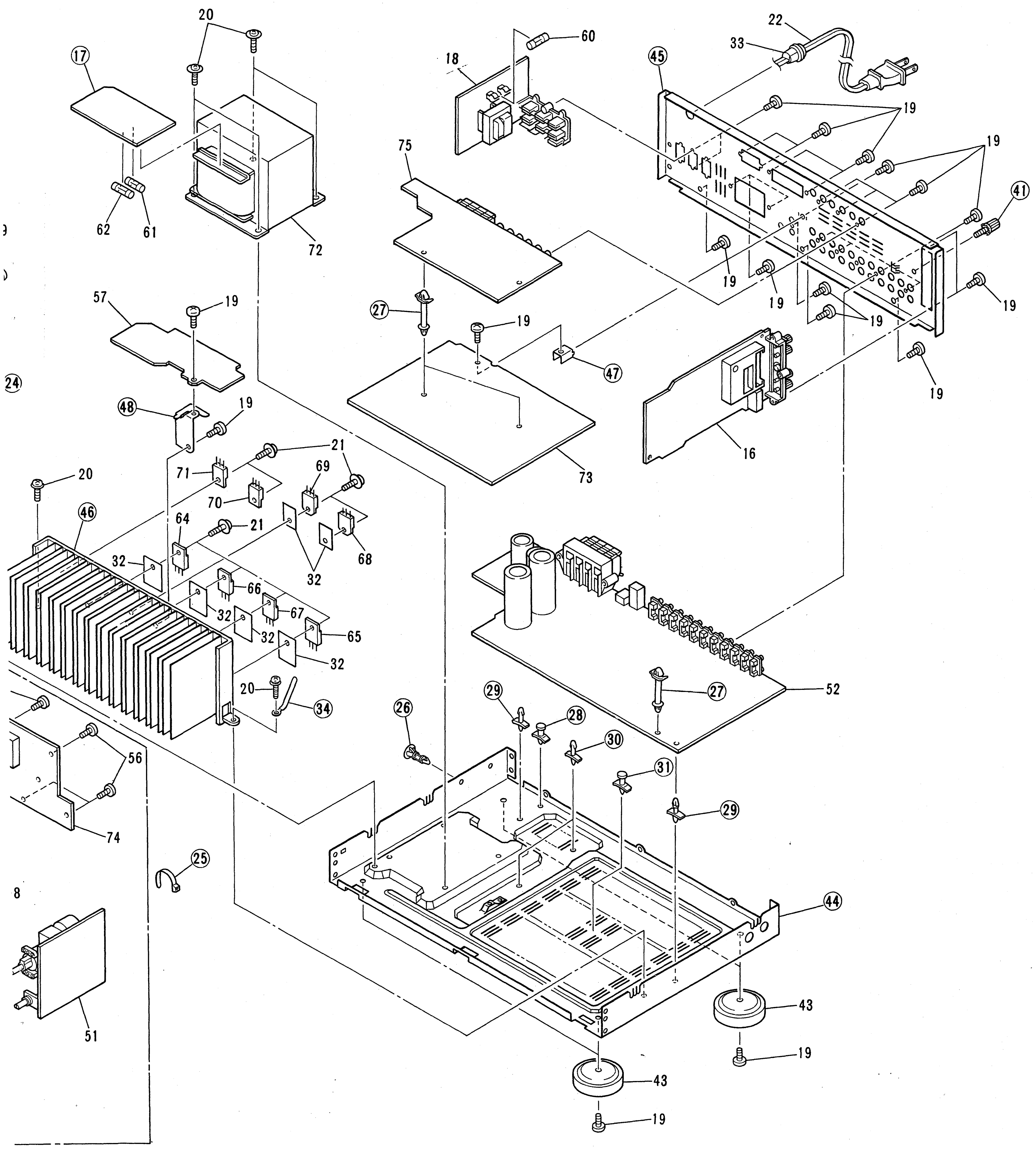
- When part (∗1) is removed from the main unit, take off the screw marked with ⓐ.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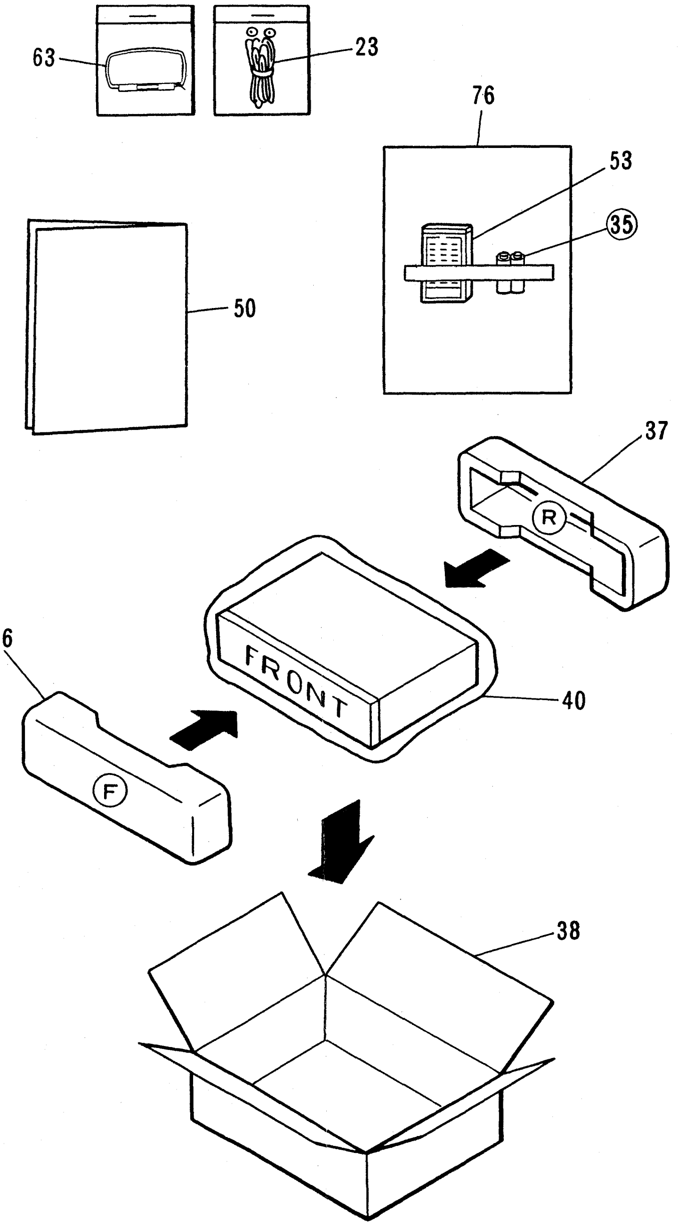
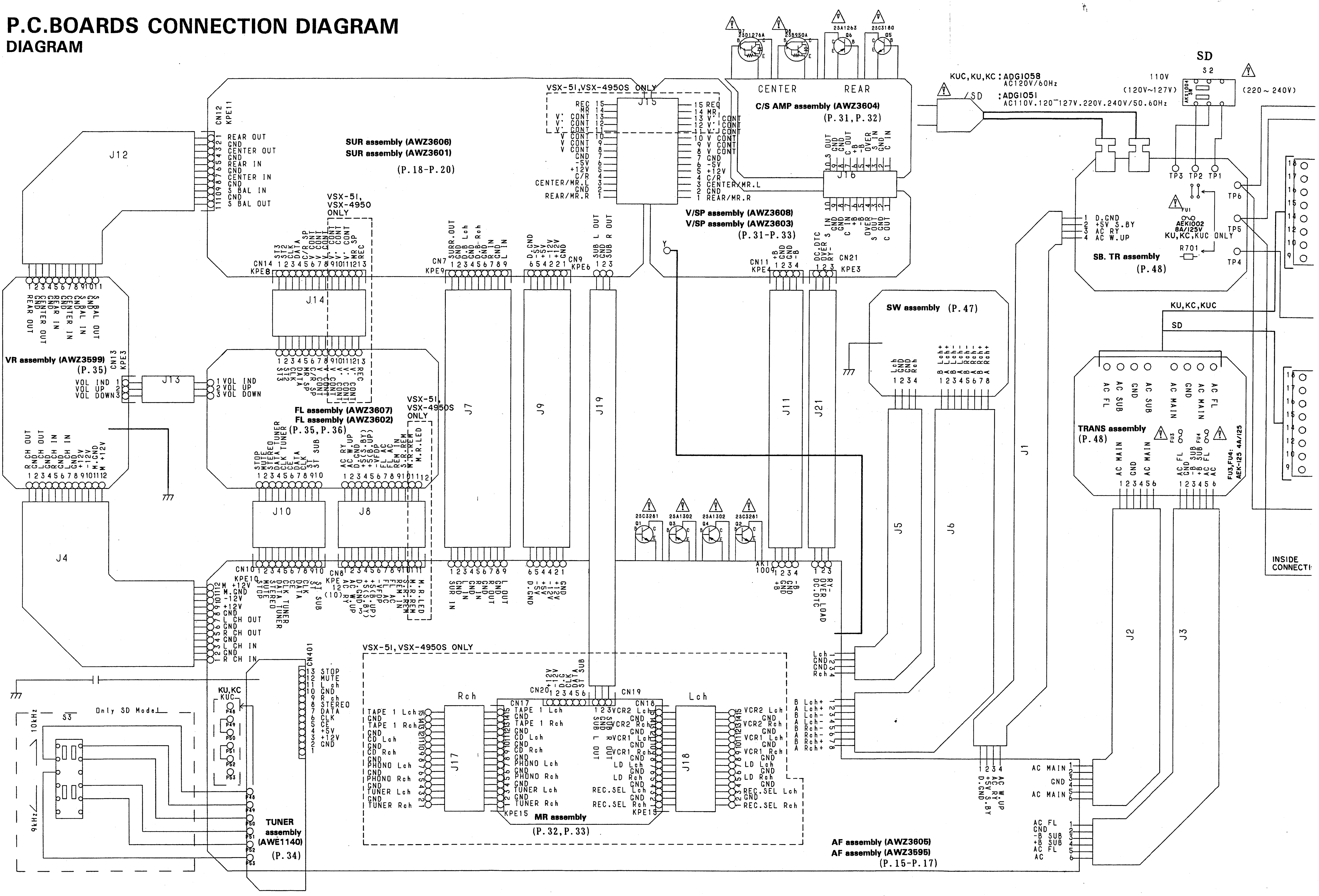
- **Packing**


㉟
R
FRONT
F

4. SCHEMATIC AND P.C.BOARDS CONNECTION DIAGRAM

4.1 OVER ALL SCHEMATIC DIAGRAM


SUR assembly (AWZ3606)
SUR assembly (AWZ3601)
(P. 18-P. 20)
VSX-51, VSX-4950S ONLY
C/S AMP assembly (AWZ3604)
(P. 31, P. 32)
CENTER
REAR
V/SP assembly (AWZ3608)
V/SP assembly (AWZ3603)
(P. 31-P. 33)
KUC, KU, KC : ADG1058 AC120V/60Hz
: ADG1051 AC110V, 120~127V, 220V, 240V/50, 60Hz
SD
S2
110V
(120V~127V)
(220~240V)
SB. TR assembly
(P. 48)
KU, KC, KUC ONLY
R701
TP1
TP2
TP3
TP4
TP5
TP6
VR assembly (AWZ3599)
(P. 35)
VSX-51, VSX-4950 ONLY
FL assembly (AWZ3607)
FL assembly (AWZ3602)
(P. 35, P. 36)
VSX-51, VSX-4950S ONLY
SW assembly (P. 47)
KU, KC, KUC
SD
TRANS assembly
(P. 48)
FU3, FU4: AEK-125 4A/125
INSIDE CONNECTI
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J12
J13
J14
J15
J16
J17
J18
J19
J21
VSX-51, VSX-4950S ONLY
MR assembly
(P. 32, P. 33)
Rch
Lch
AF assembly (AWZ3605)
AF assembly (AWZ3595)
(P. 15-P. 17)
TUNER assembly (AWE1140)
(P. 34)
KU, KC
KUC
S3
Only SD Model
10kHz
9kHz

━━━━━━━━ :FRONT SIGNAL

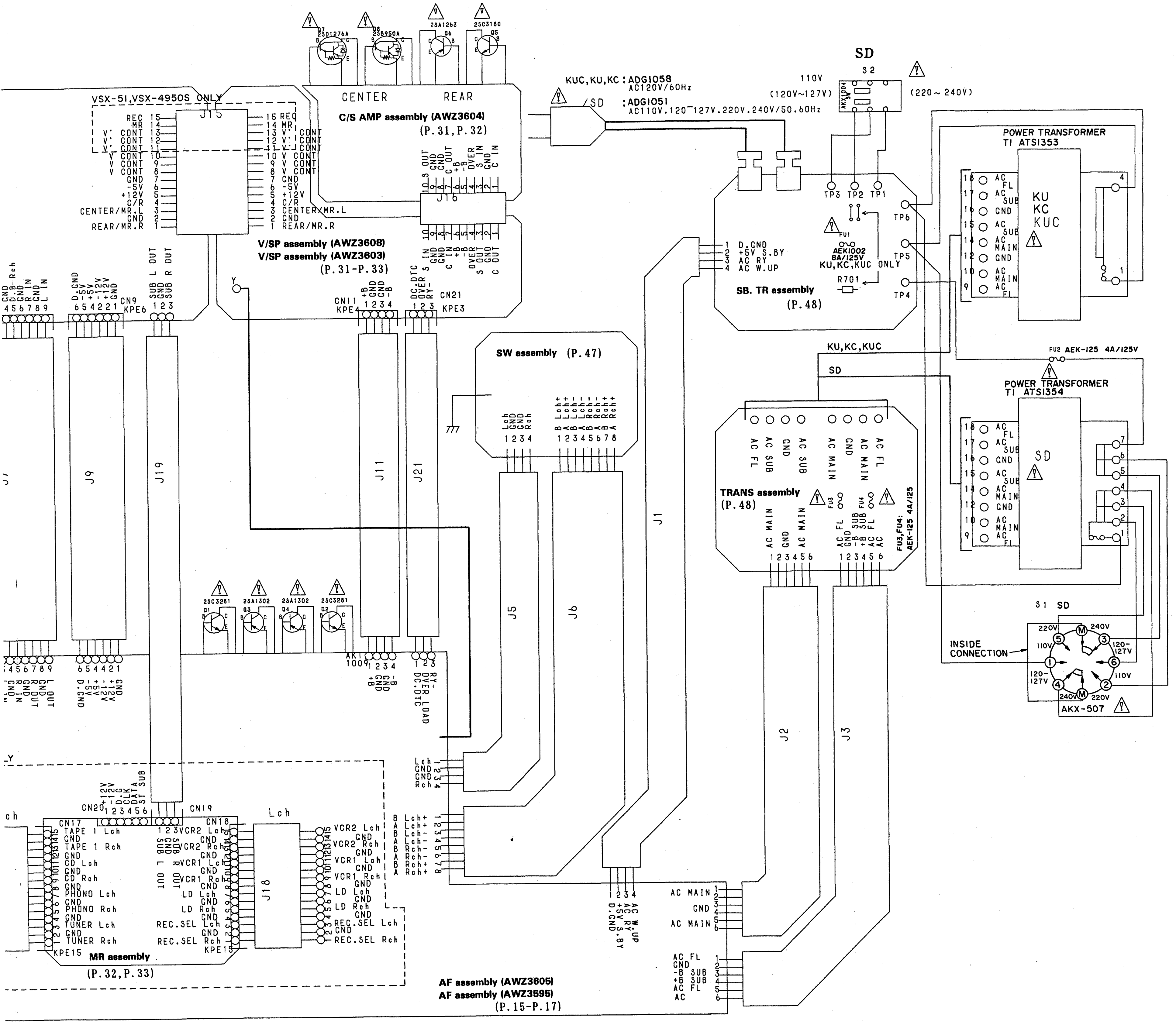
— — — — :TUNER AM SIGNAL

— · — · — :DOLBY PROLOGIC FRONT SIGNAL

━━━━━━━━ :DOLBY PROLOGIC CENTER SIGNAL

— — — — :DOLBY PROLOGIC SUB(REAR) SIGNAL

— · — · — :MR(MULTI ROOM) SIGNAL


VSX-51,VSX-4950S ONLY
J15
CENTER
REAR
C/S AMP assembly (AWZ3604)
(P.31,P.32)
J16
V/SP assembly (AWZ3608)
V/SP assembly (AWZ3603)
(P.31-P.33)
KUC,KU,KC :ADG1058
AC120V/60Hz
/SD :ADG1051
AC110V.120-127V.220V.240V/50.60Hz
SD
S2
110V
(120V~127V)
(220~240V)
TP3 TP2 TP1
TP6
TP5
TP4
AEK1002
8A/125V
KU,KC,KUC ONLY
R701
SB. TR assembly
(P.48)
POWER TRANSFORMER
T1 ATS1353
KU
KC
KUC
FU2 AEK-125 4A/125V
POWER TRANSFORMER
T1 ATS1354
SD
KU,KC,KUC
SD
SW assembly (P.47)
TRANS assembly
(P.48)
FU3,FU4:
AEK-125 4A/125
S1 SD
INSIDE CONNECTION
AKX-507
J9
J19
J11
J21
J1
J5
J6
J2
J3
J18
Lch
MR assembly
(P.32,P.33)
AF assembly (AWZ3605)
AF assembly (AWZ3595)
(P.15-P.17)
2SC3261
2SA1302
2SA1302
2SC3261
2SA1263
2SC3180
2SD1276A
2SB950A

▬▬ :FRONT SIGNAL

▬ ▬ :TUNER AM SIGNAL

▬▬ :DOLBY PROLOGIC FRONT SIGNAL

▬▬ :DOLBY PROLOGIC CENTER SIGNAL

▬ ▬ :DOLBY PROLOGIC SUB(REAR) SIGNAL

▬▬ :MR(MULTI ROOM) SIGNAL

1. RESISTORS:
Indicated in Ω, ¼W, ⅛W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
▭ : Signal voltage at (100W + 100W 8Ω :FRONT) output (1kHz)
(18W + 18W 8Ω : REAR, 20W 8Ω : CENTER

▭ : DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.

⇦ mA : DC current at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

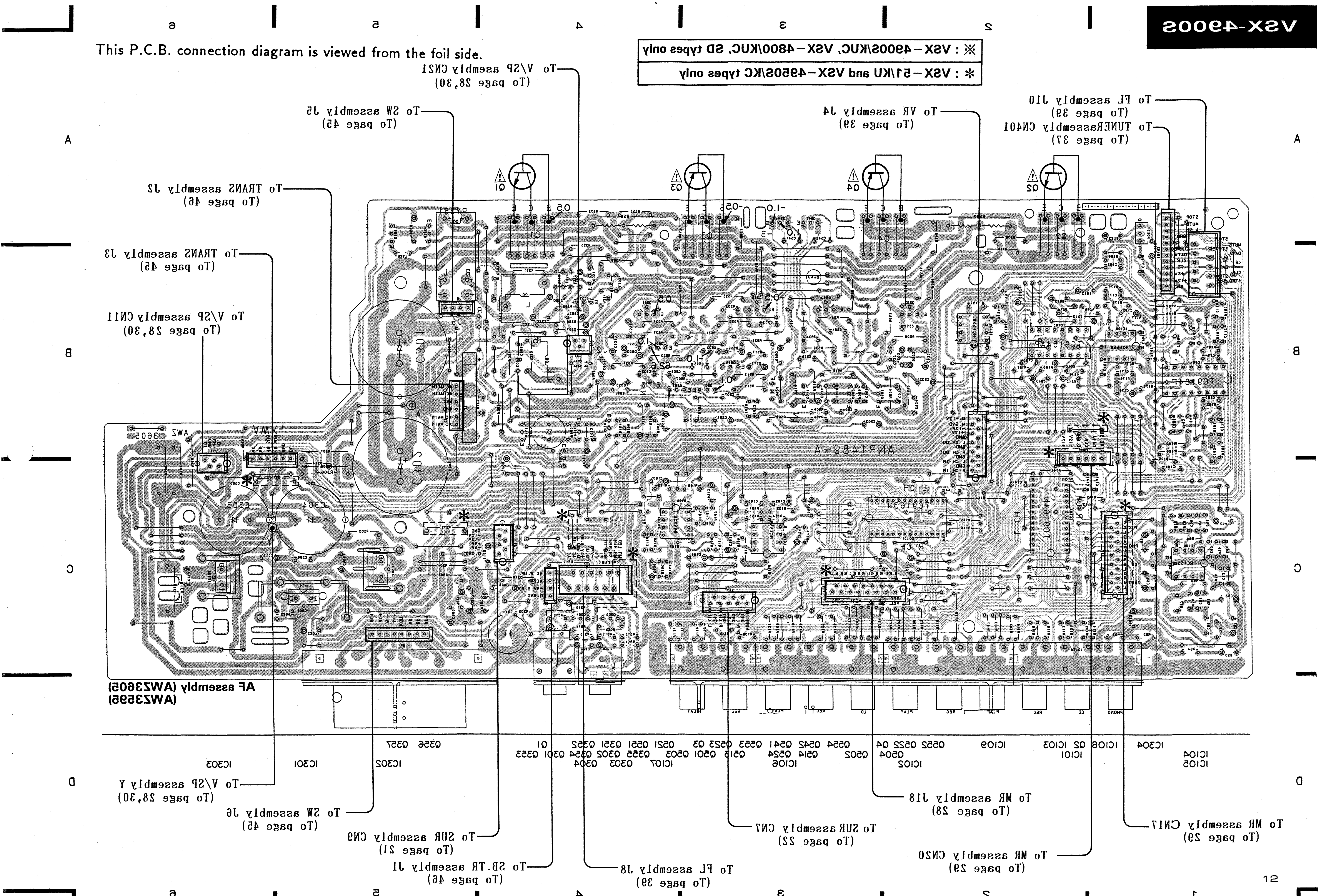
SW assembly
S581 SP-A / SP-B

FL assembly
S1001 DELAY TIME
S1002 3CH LOGIC
S1004 DOLBY PRO LOGIC
S1005 SIMULAT
S1006 STUDIO
S1007 RETURN
S1008 MUTING
S1009 ACOUSTIC MEMORY
S1010 BASS UP
S1011 BASS DOWN
S1012 ACOUSTIC SELECT
S1013 TABLE UP
S1014 TREBLE DOWN
S1015 SIMULAT STEREO
S1016 BALANCE R
S1017 BALANCE L
S1018 PHONO
S1019 TUNER
S1020 CD
S1021 LD
S1022 VCR 1
S1023 VCR 2
S1024 TAPE 1
S1025 TAPE 2
S1026 0/10
S1027 9
S1028 8
S1029 7
S1030 6
S1031 5
S1032 4
S1033 3
S1034 2
S1035 1
S1036 HITS
S1037 DIRECT ACCESS
S1038 AUTO/MANUAL
S1039 FM AUTO MONO
S1040 SCAN
S1041 SELECT
S1042 (NAME)
S1043 STATION MEMORY
S1044 FM/AM
S1045 FREQ UP
S1046 FREQ DOWN
S1047 VIDEO SELECT
S1048 REC SELECT
(VSX-51,VSX-4950S ONLY)
S1049 M,R & SOUSE
S1050 POWER ON/OFF

S1 VOLTAGE SELECTOR (ONLY SD MODEL)
110V-127V ↔ 220V-240V
S2 VOLTAGE SELECTOR (ONLY SD MODEL)
110,120-127V,220,240V
S3 BAND SELECTOR
(AM:10kHz / FM:100kHz)
↕
(AM: 9kHz / FM: 50kHz)

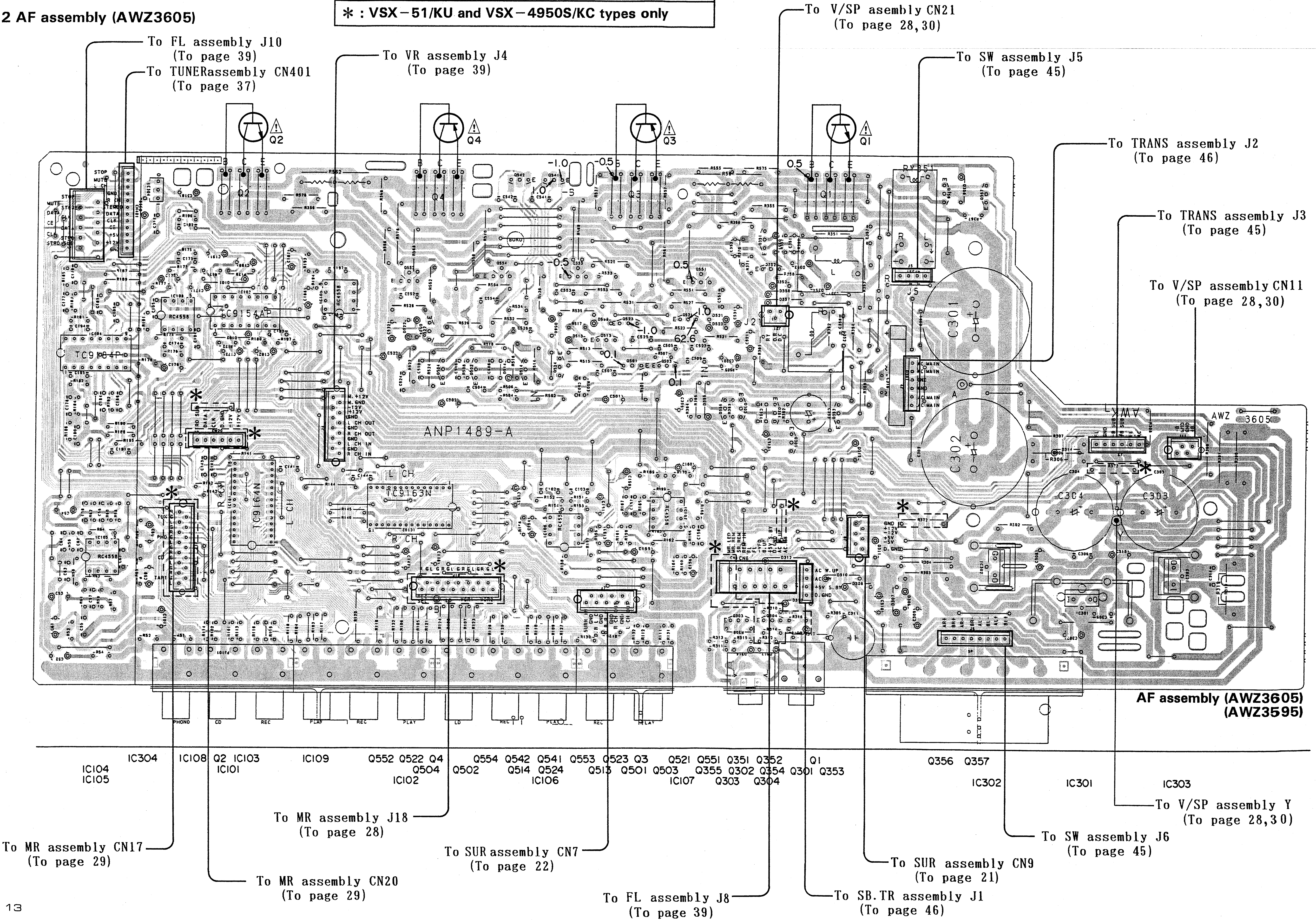
This P.C.B. connection diagram is viewed from the foil side.

※ : VSX-4900S/KUC, VSX-4800/KUC, SD types only
✱ : VSX-51/KU and VSX-4950S/KC types only

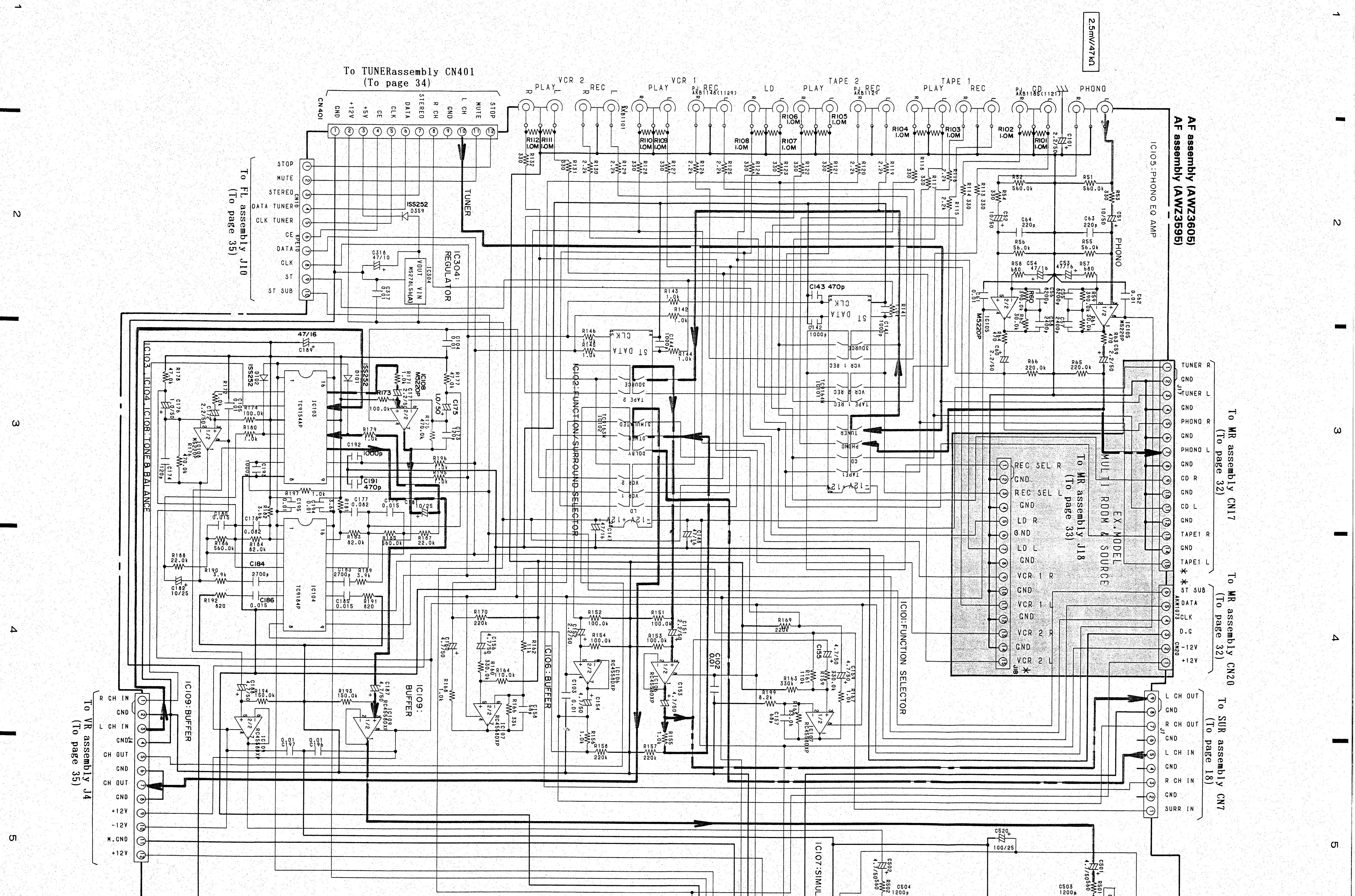

6
5
4
3
2
1
A
B
C
D
To V/SP asembly CN21
(To page 28,30)
To SW assembly J5
(To page 45)
To TRANS assembly J2
(To page 46)
To TRANS assembly J3
(To page 45)
To V/SP assembly CN11
(To page 28,30)
To VR assembly J4
(To page 39)
To FL assembly J10
(To page 39)
To TUNER assembly CN401
(To page 37)
Q1
Q3
Q4
Q2
C301
C302
C303
C304
ANP1489-A
AF assembly (AWZ3605)
(AWZ3595)
IC304 IC108 Q2 IC103 IC109 Q552 Q522 Q4 Q554 Q542 Q541 Q553 Q523 Q3 Q521 Q551 Q351 Q352 Q1 Q356 Q357
IC104 IC105 IC101 Q502 Q504 IC102 Q514 Q524 IC106 Q513 Q501 Q503 IC107 Q355 Q302 Q303 Q354 Q301 Q304 Q353 IC302 IC301 IC303
To V/SP assembly Y
(To page 28,30)
To SW assembly J6
(To page 45)
To SUR assembly CN9
(To page 21)
To SB.TR assembly J1
(To page 46)
To FL assembly J8
(To page 39)
To SUR assembly CN7
(To page 22)
To MR assembly J18
(To page 28)
To MR assembly CN20
(To page 29)
To MR assembly CN17
(To page 29)

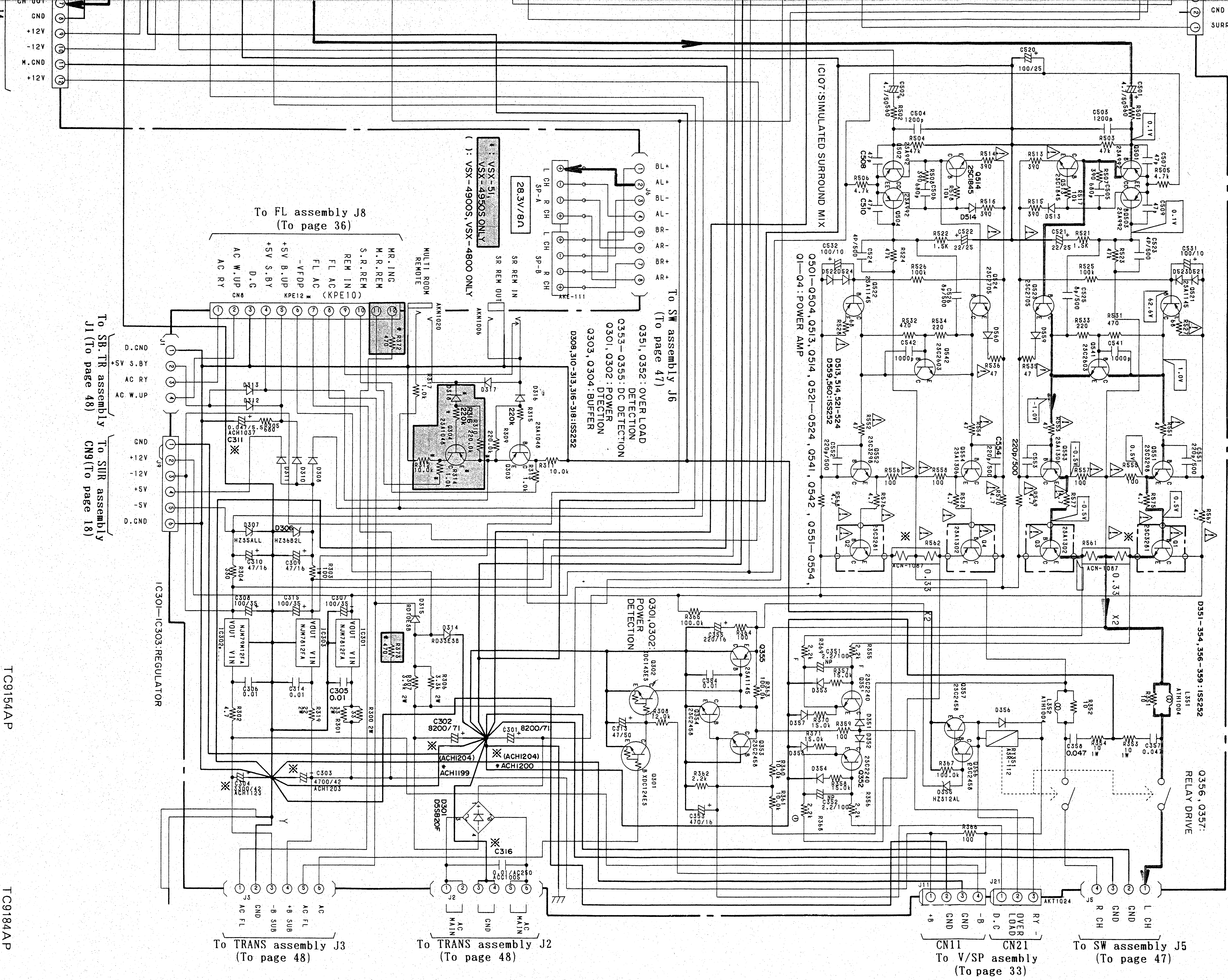
※	VSX−4900S/KUC, VSX−4800/KUC, SD types only
＊	VSX−51/KU and VSX−4950S/KC types only

4.2 AF assembly (AWZ3605)

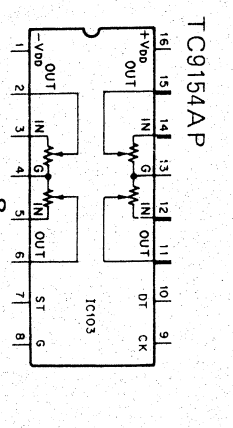

1
2
3
4
5
6
A
B
C
D
To FL assembly J10
(To page 39)
To TUNERassembly CN401
(To page 37)
To VR assembly J4
(To page 39)
To V/SP asembly CN21
(To page 28,30)
To SW assembly J5
(To page 45)
Q2
Q4
Q3
Q1
To TRANS assembly J2
(To page 46)
To TRANS assembly J3
(To page 45)
To V/SP assembly CN11
(To page 28,30)
ANP1489-A
TC9164N
TC9163N
TC9184P
C9154AP
L CH
R CH
C301
C302
C303
C304
AWZ 3605
PHONO
CD
REC
PLAY
LD
RELAY
IC304
IC104
IC105
IC108 Q2 IC103
IC101
IC109
Q552 Q522 Q4
Q504
IC102
Q554 Q542 Q541 Q553 Q523 Q3
Q502 Q514 Q524 Q513 Q501 Q503
IC106
Q521 Q551 Q351 Q352
Q355 Q302 Q354 Q301 Q353
IC107 Q303 Q304
Q1
Q356 Q357
IC302
IC301
IC303
To MR assembly J18
(To page 28)
To MR assembly CN17
(To page 29)
To SUR assembly CN7
(To page 22)
To MR assembly CN20
(To page 29)
To FL assembly J8
(To page 39)
To SB.TR assembly J1
(To page 46)
To SUR assembly CN9
(To page 21)
To SW assembly J6
(To page 45)
To V/SP assembly Y
(To page 28,30)

AF assembly (AWZ3605)
(AWZ3595)

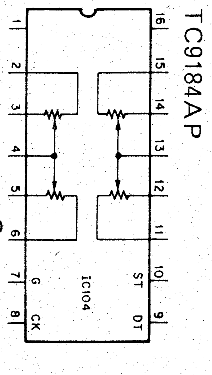

AF assembly (AWZ3605)
AF assembly (AWZ3595)
IC105:PHONO EQ AMP
2.5mV/47kΩ
To TUNERassembly CN401
(To page 34)
CN401
GND
+12V
+5V
CE
CLK
DATA
STEREO
R CH
GND
L CH
MUTE
STOP
TUNER
To FL assembly J10
(To page 35)
STOP
MUTE
STEREO
DATA TUNER
CLK TUNER
CE
DATA
CLK
ST
ST SUB
1SS252
D359
IC304:
REGULATOR
IC304
M5274L5A
VOUT
VIN
C316
47/10
PLAY
VCR 2
REC
VCR 1
LD
TAPE 2
TAPE 1
CD
PHONO
PJ REC
AKB1146(1129)
AKB1101
AKB1129
AKB1185(1121)
R112 1.0M
R111 1.0M
R110 1.0M
R109 1.0M
R108 1.0M
R107 1.0M
R106 1.0M
R105 1.0M
R104 1.0M
R103 1.0M
R102 1.0M
R101 1.0M
R52 560.0k
R51 560.0k
C64 220p
C63 220p
R56 56.0k
R55 56.0k
R58 680
R57 680
IC105 M5220P
R66 220.0k
R65 220.0k
C143 470p
CLK
ST DATA
SOURCE
VCR 1 REC
VCR 2 REC
TAPE 1 REC
TUNER
PHONO
CD
TAPE1
TC9164N
IC101
IC102:FUNCTION/SURROUND SELECTOR
TC9163N
IC102
TAPE 2
SIMULATED
DOLBY
VCR 2
VCR 1
LD
IC103, IC104, IC108:TONE & BALANCE
IC103
TC9154AP
IC104
TC9184P
IC108
M5220P
C189 47/16
1SS252
D101
D102
R173 100.0k
C175 10/50
C192 1000p
C191 470p
C177 0.082
C184 2700p
C186 0.015
C183 2700p
C185 0.015
R192 820
R191 820
R188 22.0k
C182 10/25
IC109:BUFFER
IC109:
BUFFER
R193 150.0k
R194 150.0k
RC4558DXP
C187 4.7/50
0.01 C197
0.01 C196
R170 220k
IC106:BUFFER
IC106
RC4558DXP
R152 100.0k
R151 100.0k
R154 100.0k
R153 100.0k
R156 1.0k
R158 220k
R157 220k
C102 0.01
IC101:FUNCTION SELECTOR
IC107
RC4558DXP
R169 220k
R163 330k
R199 8.2k
IC107:SIMUL
C520 100/25
C502 4.7/50
C504 1200p
C503 1200p
C501 4.7/50
EX.MODEL
MULTI ROOM & SOURCE
To MR assembly J18
(To page 33)
REC SEL R
GND
REC SEL L
GND
LD R
GND
LD L
GND
VCR 1 R
GND
VCR 1 L
GND
VCR 2 R
GND
VCR 2 L
J18
To MR assembly CN17
(To page 32)
J17
TUNER R
GND
TUNER L
GND
PHONO R
GND
PHONO L
GND
CD R
GND
CD L
GND
TAPE1 R
GND
TAPE1 L
To MR assembly CN20
(To page 32)
CN20
AKM1073
ST SUB
DATA
CLK
D.G
-12V
+12V
To SUR assembly CN7
(To page 18)
J7
L CH OUT
GND
R CH OUT
GND
L CH IN
GND
R CH IN
GND
SURR IN
To VR assembly J4
(To page 35)
J4
R CH IN
GND
L CH IN
GND
CH OUT
GND
CH OUT
GND
+12V
-12V
M.GND
+12V
1
2
3
4
5

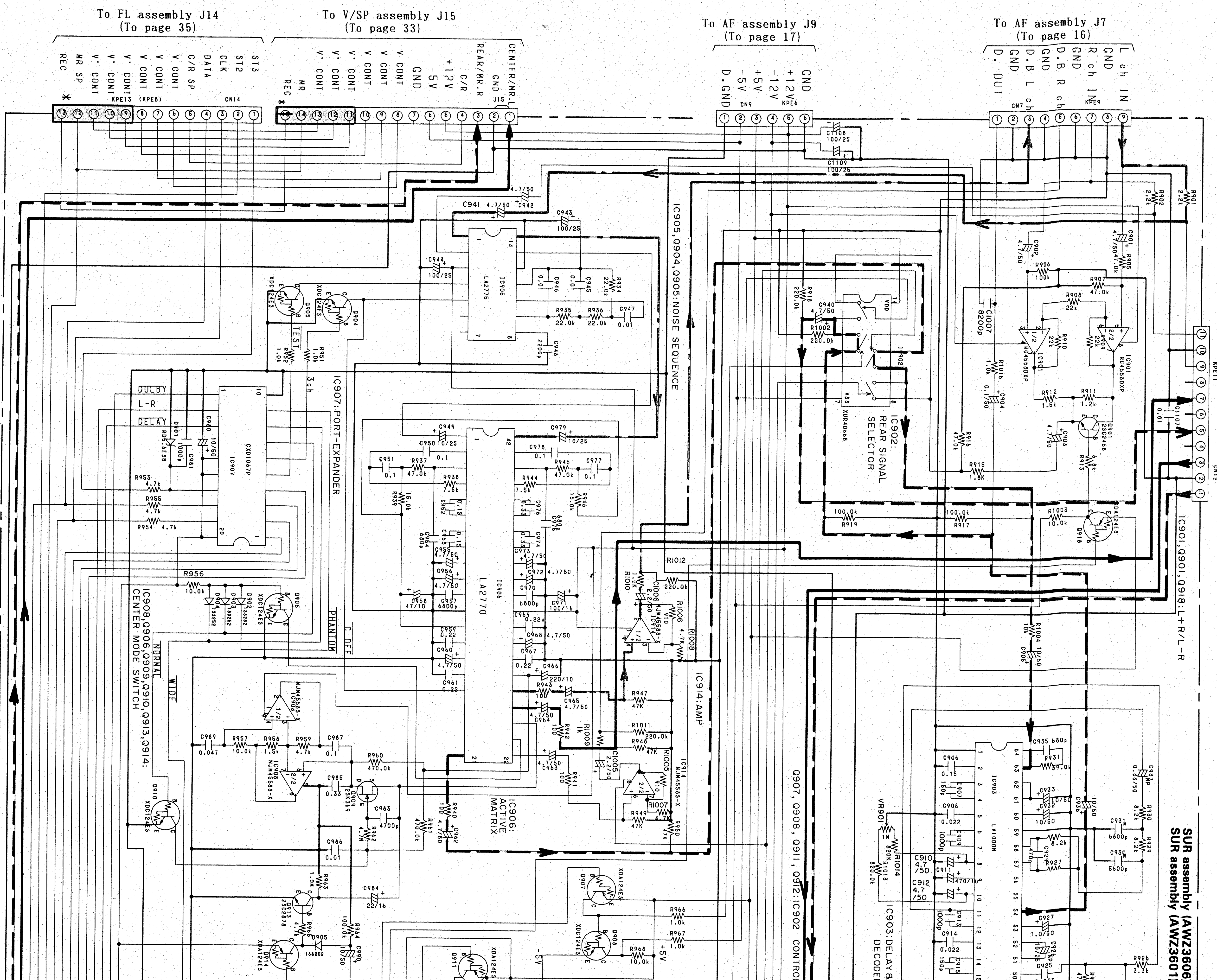

J4
GND
+12V
-12V
M.GND
+12V
CN7
GND
SURR IN
To FL assembly J8
(To page 36)
MR.ING
M.R.REM
S.R.REM
REM IN
FL AC
FL AC
-VFDP
+5V B.UP
+5V S.BY
D.G
AC W.UP
AC RY
CN8
KPE12
(KPE10)
MULTI ROOM REMOTE
SR REM OUT
SR REM IN
AKN1020
AKN1006
*: VSX-51, VSX-4950S ONLY
( ): VSX-4900S, VSX-4800 ONLY
28.3V/8Ω
L CH R CH SP-A
L CH R CH SP-B
AKE-111
BL+
AL+
BL-
AL-
BR-
AR-
BR+
AR+
To SW assembly J6
(To page 47)
Q351, Q352: OVER LOAD DETECTION
Q353—Q355: DC DETECTION
Q301, Q302: POWER DTECTION
Q303, Q304: BUFFER
D308, 310—313, 316—318: 1SS252
IC107: SIMULATED SURROUND MIX
Q501—Q504, Q513, Q514, Q521—Q524, Q541, Q542, Q551—Q554,
Q1—Q4: POWER AMP
D513, 514, 521—524
D559, 560: 1SS252
To SB.TR assembly J1 (To page 48)
D.GND
+5V S.BY
AC RY
AC W.UP
To SUR assembly CN9 (To page 18)
GND
+12V
-12V
+5V
-5V
D.GND
IC301—IC303: REGULATOR
NJM7912FA
NJM7812FA
NJM7812FA
Q301, Q302: POWER DETECTION
D351—354, 356—359: 1SS252
Q356, Q357: RELAY DRIVE
ACN-1087
0.33
0.33
X2
C302 8200/71
C301 8200/71
(ACH1204)
*ACH1199
*ACH1200
C303 4700/42 ACH1203
C304 3300/42 ACH1123
D301 D5SB20F
C316 0.01/AC250 ACG1005
To TRANS assembly J3
(To page 48)
AC FL
GND
-B SUB
+B SUB
AC FL
AC
To TRANS assembly J2
(To page 48)
AC MAIN
GND
AC MAIN
J11
J21
AKT1024
J5
+B
GND
GND
-B
D.C
OVER LOAD
RY -
R CH
GND
GND
L CH
CN11
To V/SP asembly
(To page 33)
CN21
To SW assembly J5
(To page 47)
0.1V
1.0V
-1.0V
62.6V
0.5V
-0.5V

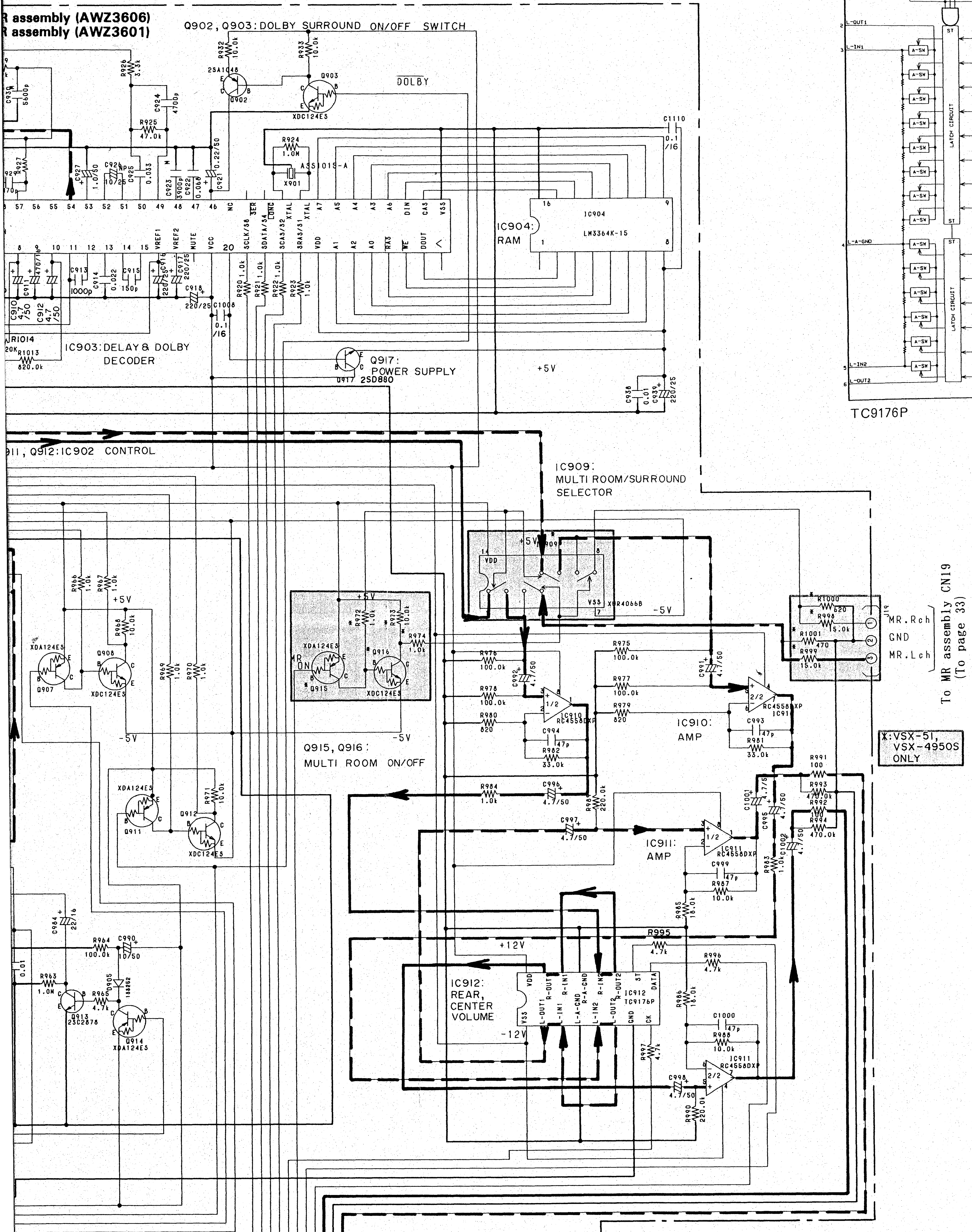
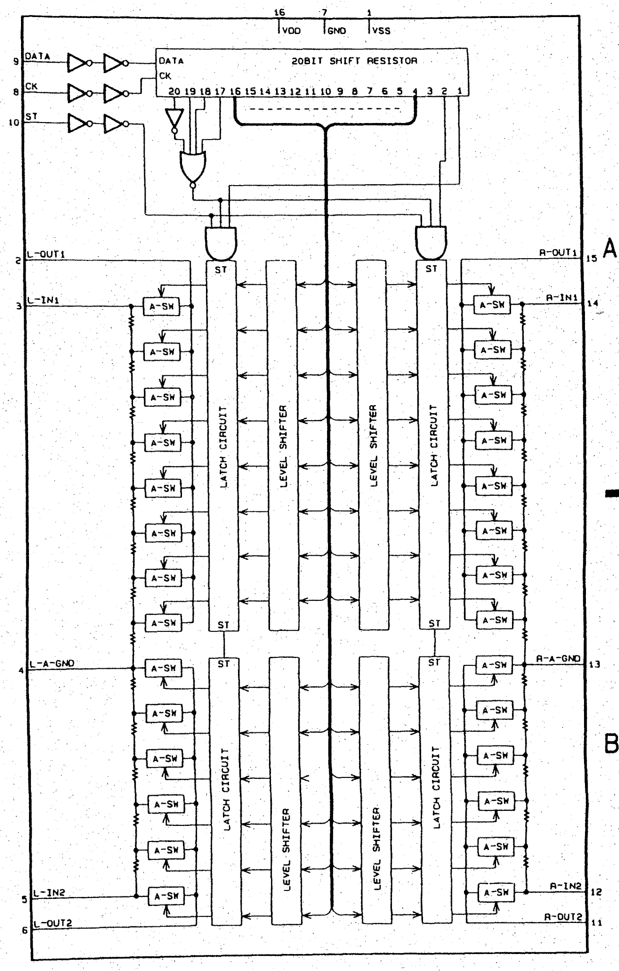
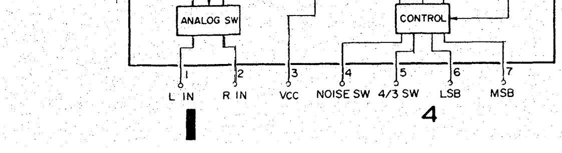
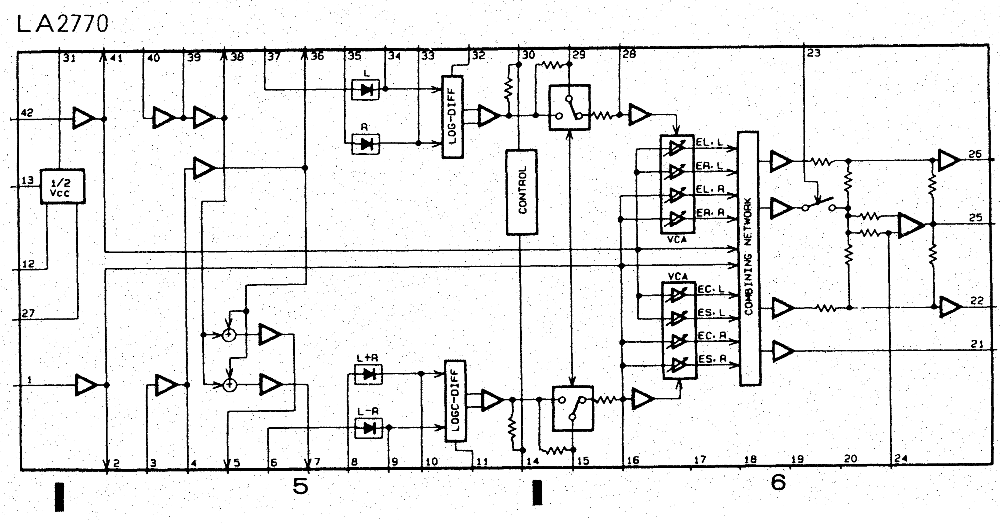
TC9154AP

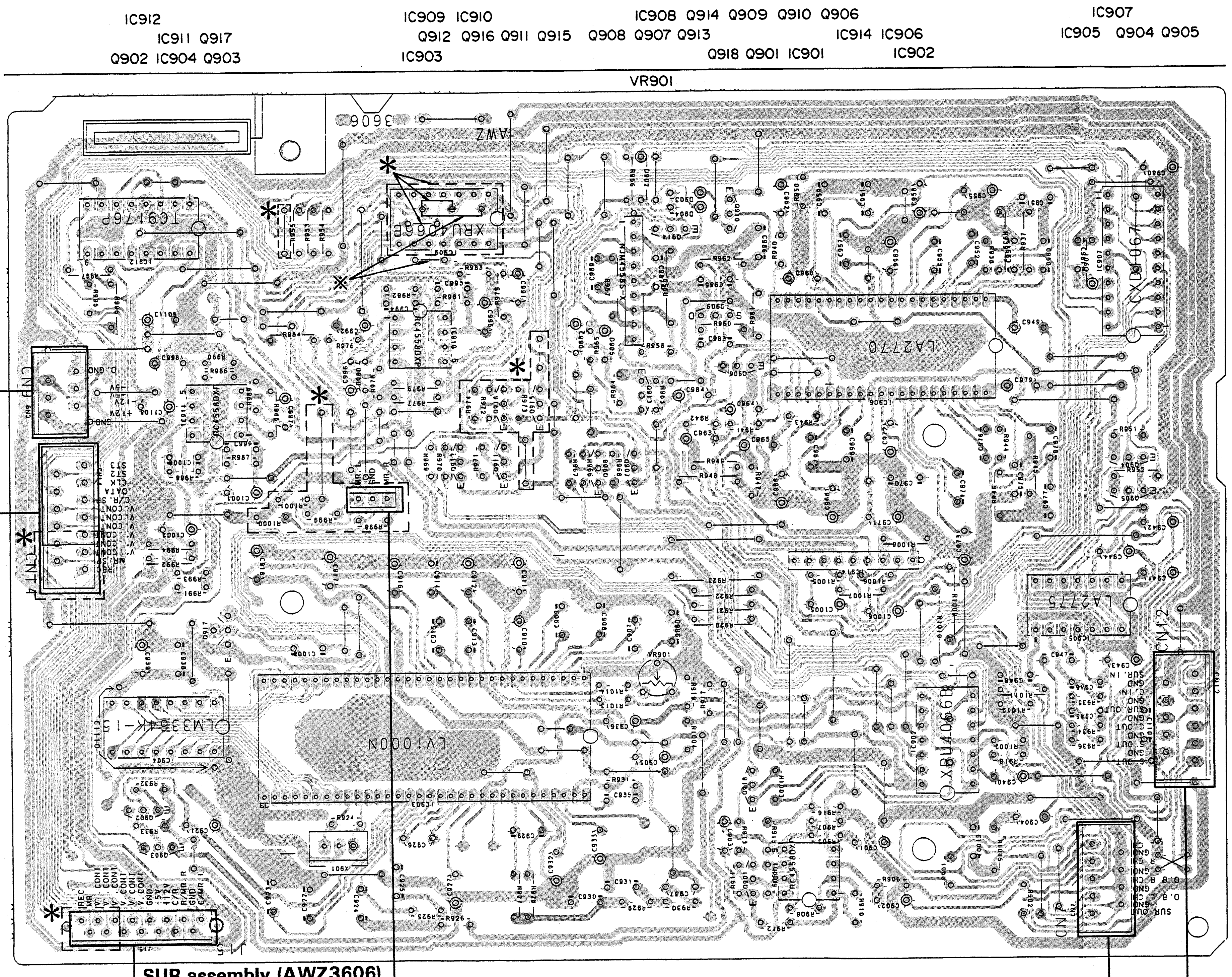

+VDD OUT
-VDD OUT
IN
IN
G
G
IN
IN
OUT
OUT
ST
DT
G
CK
IC103

TC9184AP


G
ST
DT
CK
IC104


To FL assembly J14
(To page 35)
To V/SP assembly J15
(To page 33)
To AF assembly J9
(To page 17)
To AF assembly J7
(To page 16)
To VR assembly J12
(To page 35)
REC
MR SP
V' CONT
C/R SP
DATA
CLK
ST2
ST3
KPE13
(KPE8)
CN14
CENTER/MR.L
GND
REAR/MR.R
C/R
+12V
-5V
GND
V CONT
V' CONT
MR
REC
J15
GND
+12V
-12V
+5V
-5V
D.GND
CN9
KPE6
L ch IN
GND
R ch IN
GND
D.B R ch
GND
D.B L ch
GND
D. OUT
CN7
KPE9
S'OUT
GND
C OUT
S OUT
C IN
S IN
KPE11
CN12
C1108 100/25
C1109 100/25
IC905,Q904,Q905:NOISE SEQUENCE
IC905 LA2775
IC907:PORT-EXPANDER
IC907 CXD1067P
DOLBY
L-R
DELAY
TEST
3ch
IC902:
REAR SIGNAL
SELECTOR
XUR4066B
IC901
RC4558DXP
IC901,Q901,Q918:L+R/L-R
IC906 LA2770
IC906:
ACTIVE
MATRIX
IC914:AMP
IC914 NJM4558S-X
IC908 NJM4558S-X
IC908,Q906,Q909,Q910,Q913,Q914:
CENTER MODE SWITCH
NORMAL
WIDE
PHANTOM
C OFF
Q907,Q908,Q911,Q912:IC902 CONTRO
IC903 LV1000N
IC903:DELAY &
DECODE
VR901
SUR assembly (AWZ3606)
SUR assembly (AWZ3601)


R assembly (AWZ3606)
R assembly (AWZ3601)
Q902, Q903: DOLBY SURROUND ON/OFF SWITCH
DOLBY
IC903: DELAY & DOLBY DECODER
IC904: RAM
IC904 LM3364K-15
Q917: POWER SUPPLY
Q917 2SD880
+5V
Q911, Q912: IC902 CONTROL
IC909: MULTI ROOM/SURROUND SELECTOR
XDR4066B
Q915, Q916: MULTI ROOM ON/OFF
IC910: AMP
IC911: AMP
IC912: REAR, CENTER VOLUME
IC912 TC9176P
+12V
-12V
-5V
MR.Rch
GND
MR.Lch
To MR assembly CN19 (To page 33)
※: VSX-51, VSX-4950S ONLY

TC9176P
20BIT SHIFT RESISTOR
LATCH CIRCUIT
LEVEL SHIFTER
A-SW
DATA
CK
ST
L-OUT1
L-IN1
L-A-GND
L-IN2
L-OUT2
R-OUT1
R-IN1
R-A-GND
R-IN2
R-OUT2
VDD
GND
VSS

LA2775
L OUT
R OUT
GND
VREF
OSC
ANALOG SW
POWER SUPPLY
NOISE GENERATOR
NOISE MODE
CLOCK OSC
CONTROL
L IN
R IN
VCC
NOISE SW
4/3 SW
LSB
MSB

LA2770
1/2 VCC
LOG-DIFF
CONTROL
VCA
COMBINING NETWORK
EL-L
ER-L
EL-R
ER-R
EC-L
ES-L
EC-R
ES-R
L+R
L-R


IC912
IC911 Q917
Q902 IC904 Q903
IC909 IC910
Q912 Q916 Q911 Q915
IC903
IC908 Q914 Q909 Q910 Q906
Q908 Q907 Q913
Q918 Q901 IC901
IC914 IC906
IC902
IC907
IC905 Q904 Q905
VR901
AWZ 3606
TC9176P
XRU4066
LA2770
CXD1067
CN8
CN4
IC4558DX
LA2775
XRU4066B
LM324
LV1000N
CN12
CN7
J17
CN5

SUR assembly (AWZ3606)
(AWZ3601)

To AF assembly J9
(To page 14)

To FL assembly J14
(To page 39)

To V/SP assembly J15
(To page 28,30)

To MR assembly CN19
(To page 28)

To AF assembly J7
(To page 13)

To VR assembly J12
(To page 39)

NOTE

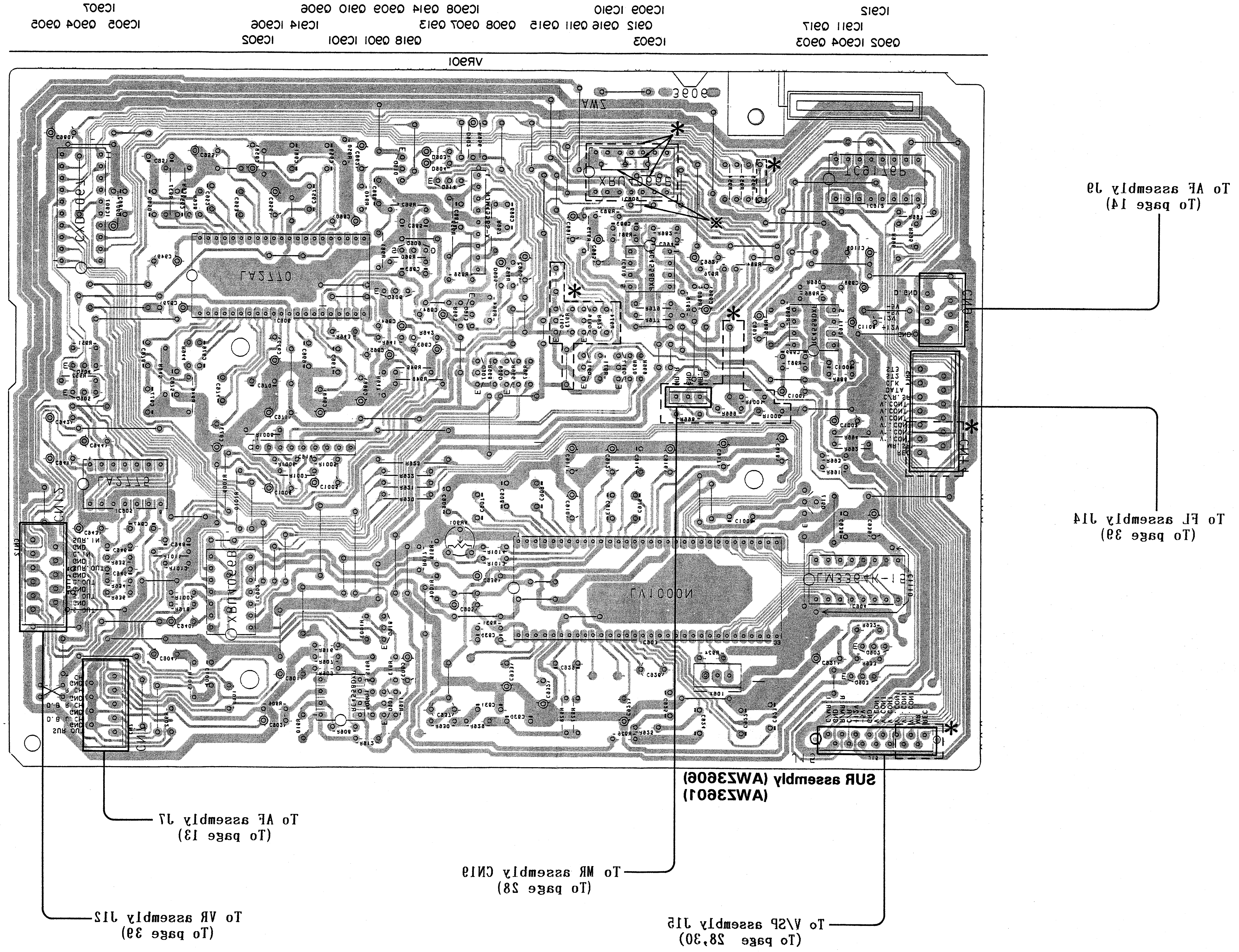
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

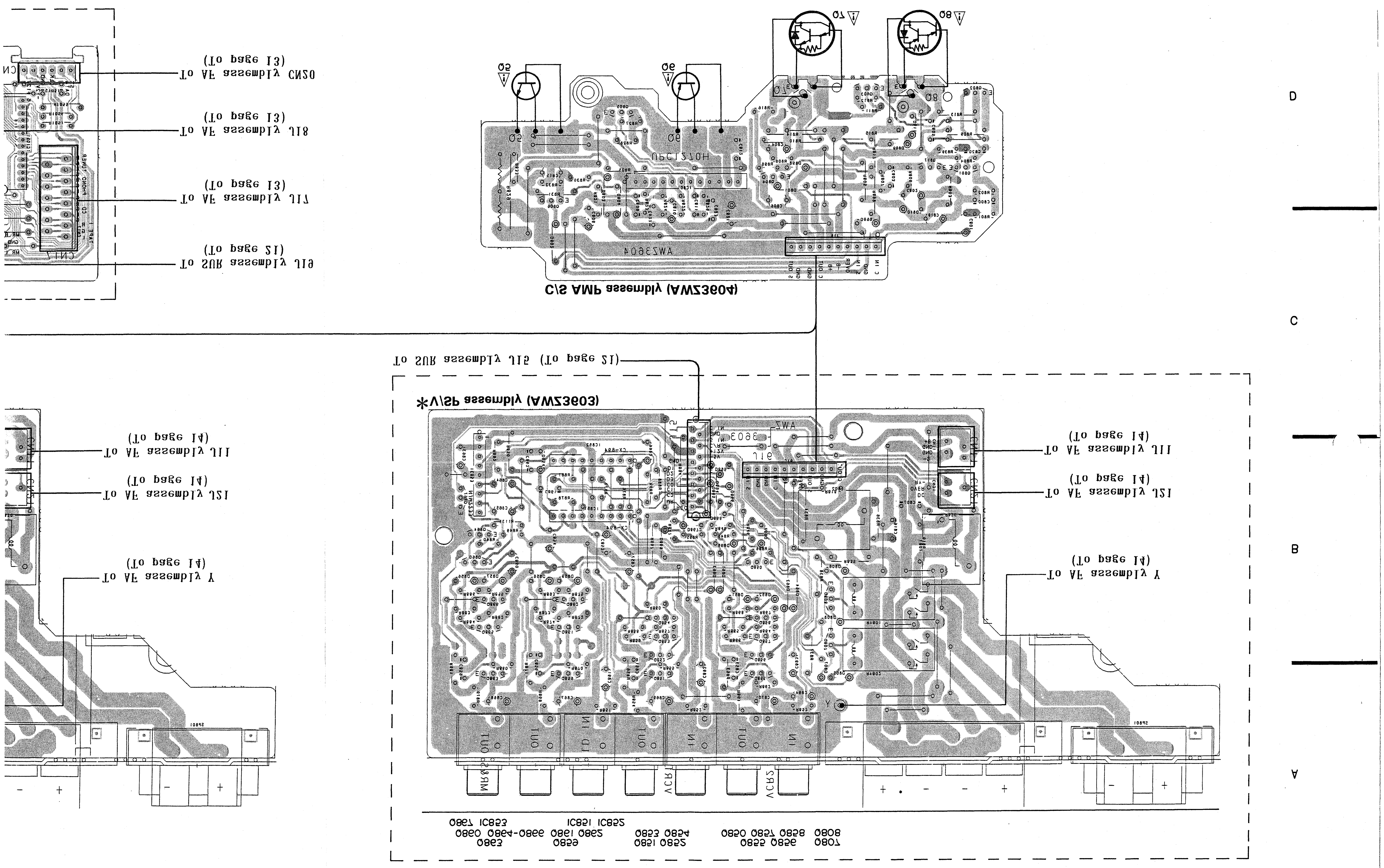
Others

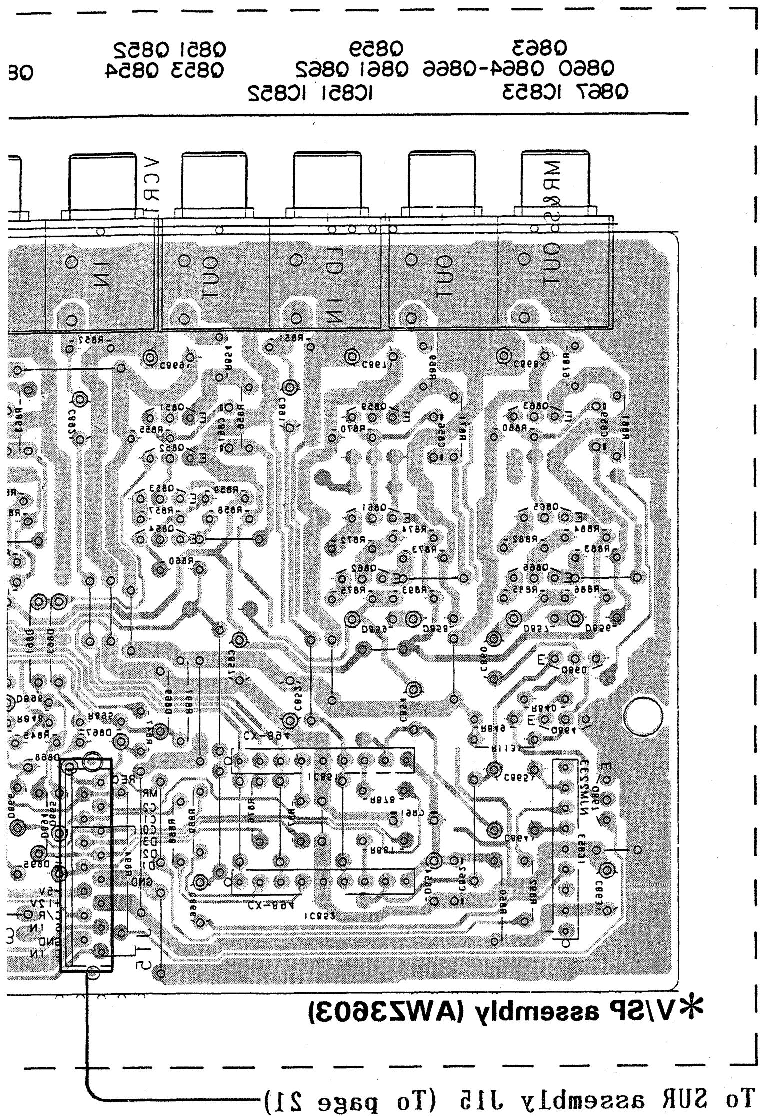
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

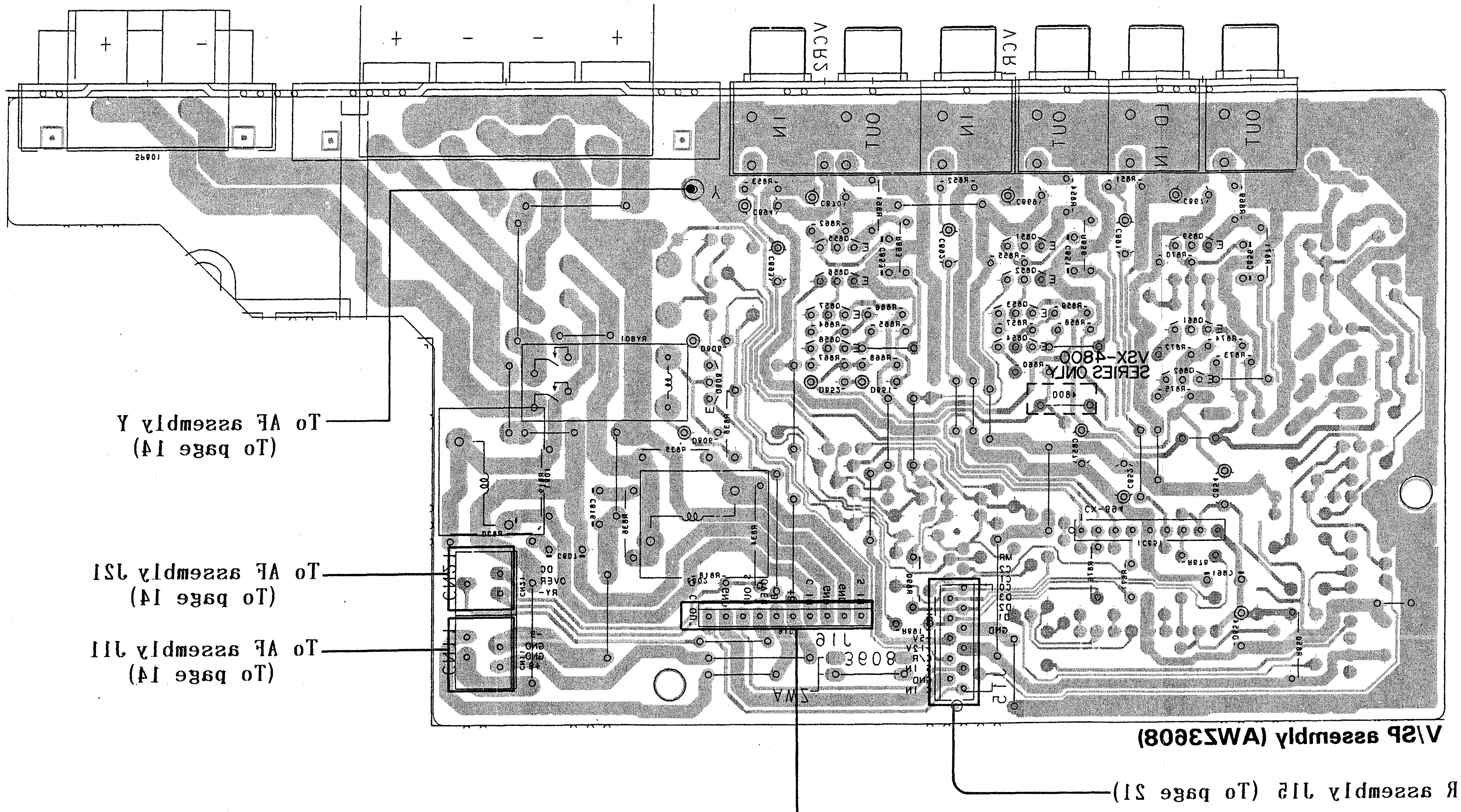

IC912
IC911 Q917
Q902 IC904 Q903
IC909 IC910
Q912 Q916 Q911 Q915
IC903
IC908 Q914 Q909 Q910 Q906
Q908 Q907 Q913
IC914 IC906
Q918 Q901 IC901
IC902
IC907
IC905 Q904 Q905
VR901
A
B
C
D
To AF assembly J9
(To page 14)
To FL assembly J14
(To page 39)
To AF assembly J7
(To page 13)
To MR assembly CN19
(To page 28)
To VR assembly J12
(To page 39)
To V/SP assembly J15
(To page 28,30)
*

SUR assembly (AWZ3606)
(AWZ3601)

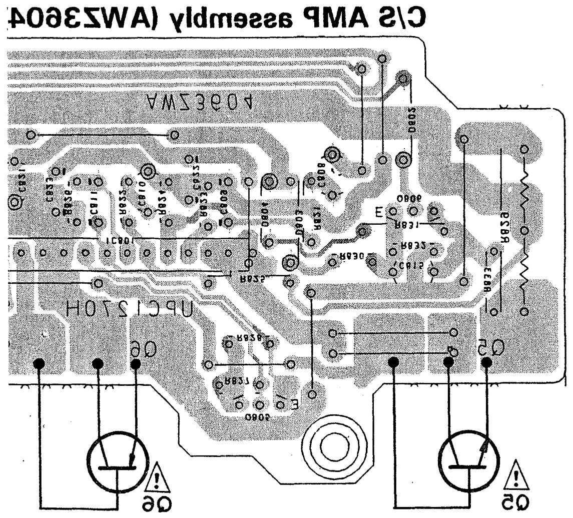
4
5
6
7
8
9
A
B
C
D
Q5
Q6
Q7
Q8
To AF assembly CN20 (To page 13)
To AF assembly J18 (To page 13)
To AF assembly J17 (To page 13)
To SUR assembly J19 (To page 21)
C/S AMP assembly (AWZ3604)
UPC1270H
To SUR assembly J15 (To page 21)
*V/SP assembly (AWZ3603)
To AF assembly J11 (To page 14)
To AF assembly J21 (To page 14)
To AF assembly Y (To page 14)
MR&S OUT
LD IN
VCR1
VCR2
Q807 Q808
Q855 Q856
Q850 Q857 Q858
Q851 Q852
Q853 Q854
Q859
Q861 Q862
IC851 IC852
Q863
Q860 Q864-Q866
Q867 IC853


***V/SP assembly (AWZ3603)**

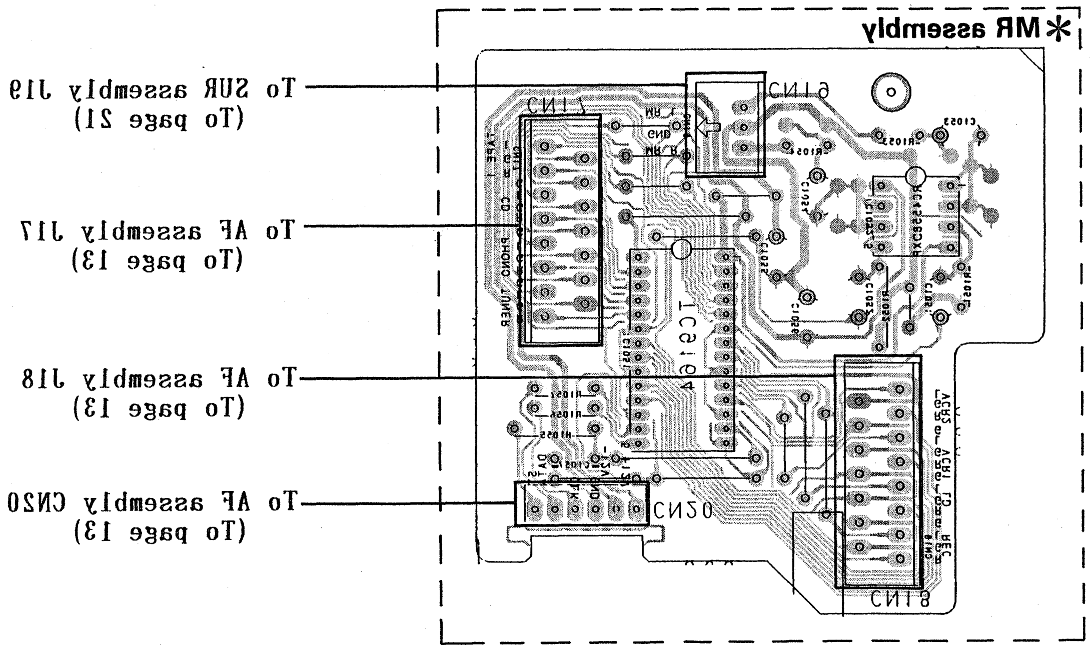
To SUR assembly J15 (To page 21)
Q863
Q860 Q864-Q866 Q861 Q862
Q867 IC853
Q859
IC851 IC852
Q851 Q852
Q853 Q854
MR&S OUT
OUT
LD IN
OUT
VCR1
IN


V/SP assembly (AWZ3608)

To AF assembly Y
(To page 14)
To AF assembly J21
(To page 14)
To AF assembly J11
(To page 14)
To SUR assembly J15 (To page 21)
VSX-4800
SERIES ONLY
J16
OUT
LD IN
OUT
VCR1
IN
OUT
VCR2
IN
+
-
-
+
+
-

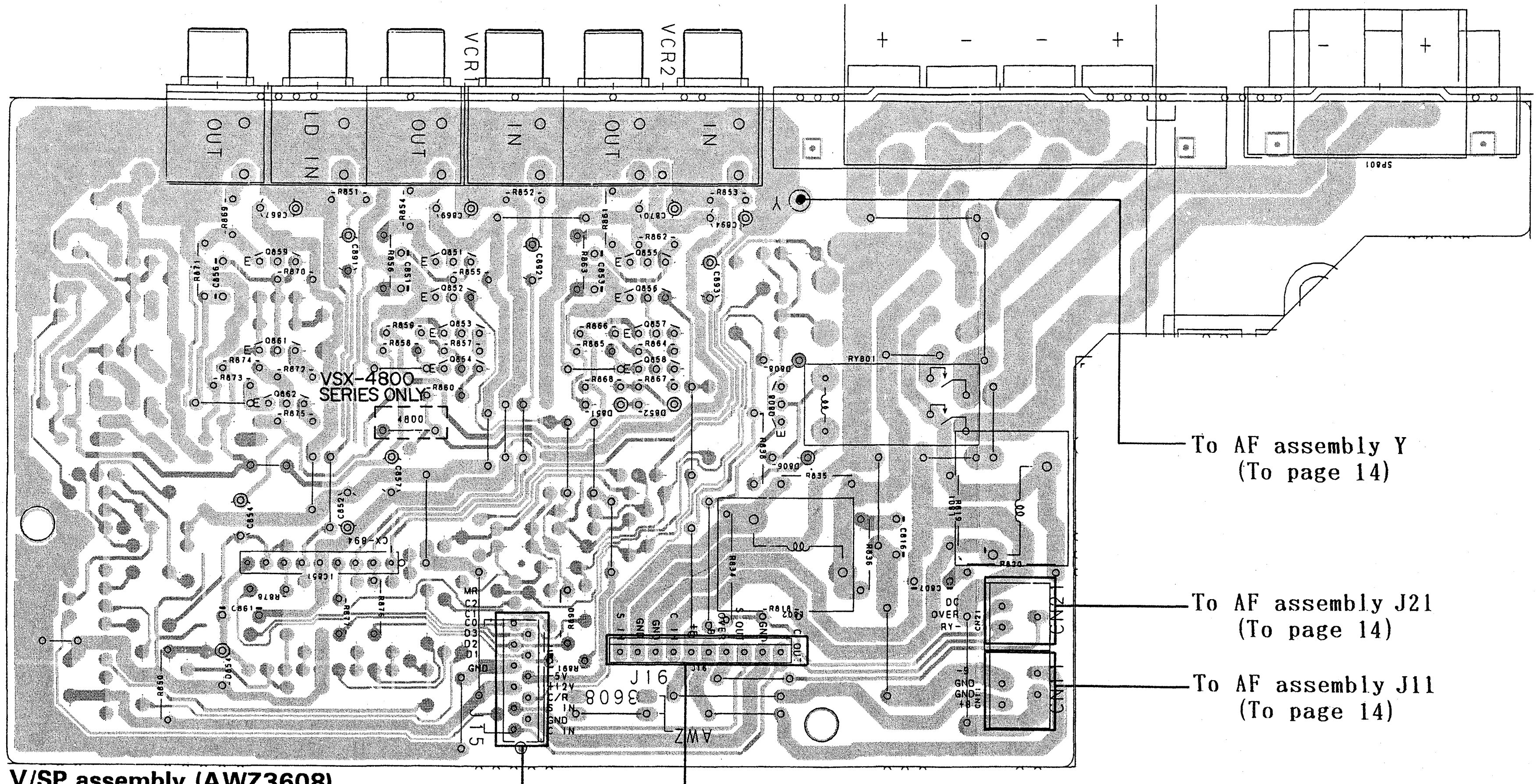

C/S AMP assembly (AWZ3604

UPC1270H
Q5
Q6


***MR assembly**

To SUR assembly J19
(To page 21)
To AF assembly J17
(To page 13)
To AF assembly J18
(To page 13)
To AF assembly CN20
(To page 13)
CN19
CN17
IC1619
CN20
CN18

4.4 V/SP (AWZ3608 and AWZ3603), C/S AMP (AWZ3604) and MR assembly


VCR2
VCR1
IN
OUT
LD IN
J16
3608
AWZ
J15
CN11
CN21
Y
VSX-4800
SERIES ONLY
SP801

To AF assembly Y
(To page 14)

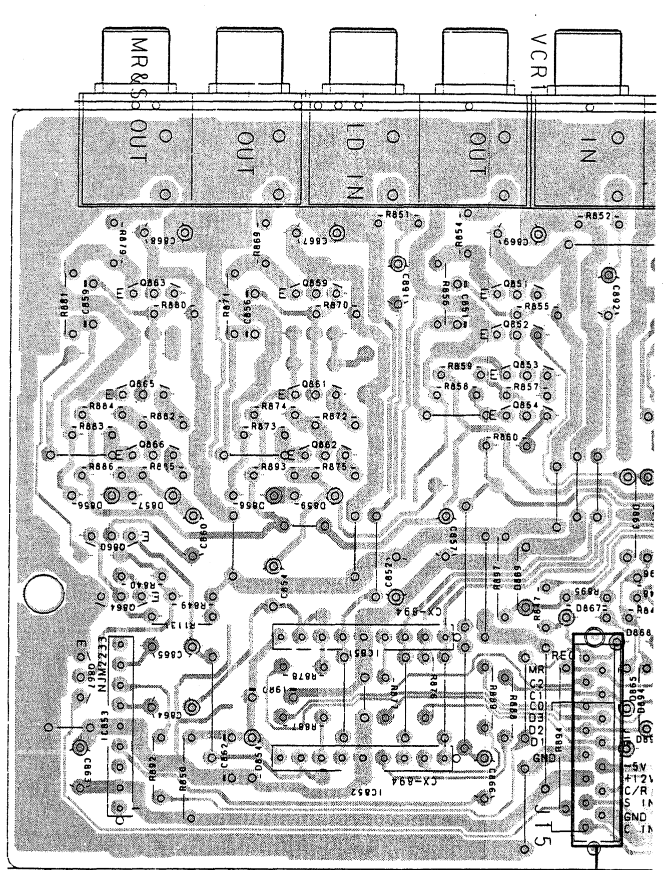
To AF assembly J21
(To page 14)

To AF assembly J11
(To page 14)

V/SP assembly (AWZ3608)

To SUR assembly J15 (To page 21)

Q863 Q859 Q851 Q852
Q860 Q864-Q866 Q861 Q862 Q853 Q854
Q867 IC853 IC851 IC852

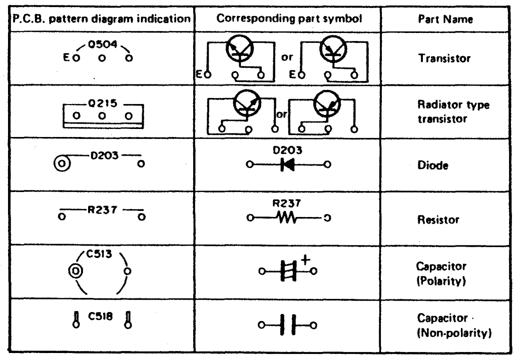

MR&S
OUT
LD IN
IN
VCR1
J15

***V/SP assembly (AWZ3603)**

To SUR assembly J15 (To page 21)

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.



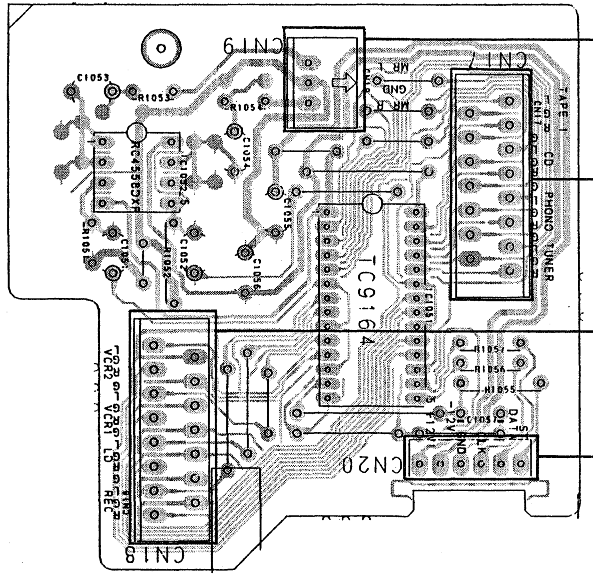
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504	or	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

***MR assembly**


CN19
CN17
CN18
CN20
TC9164
TAPE 1
CD
PHONO
TUNER
MR
GND
VCR2
VCR1
LD

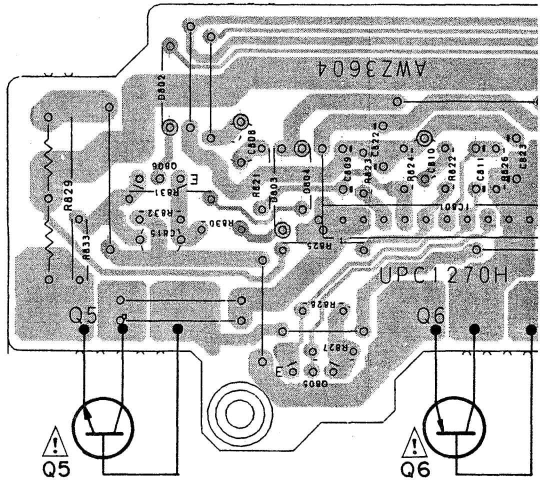
To SUR assembly J19
(To page 21)

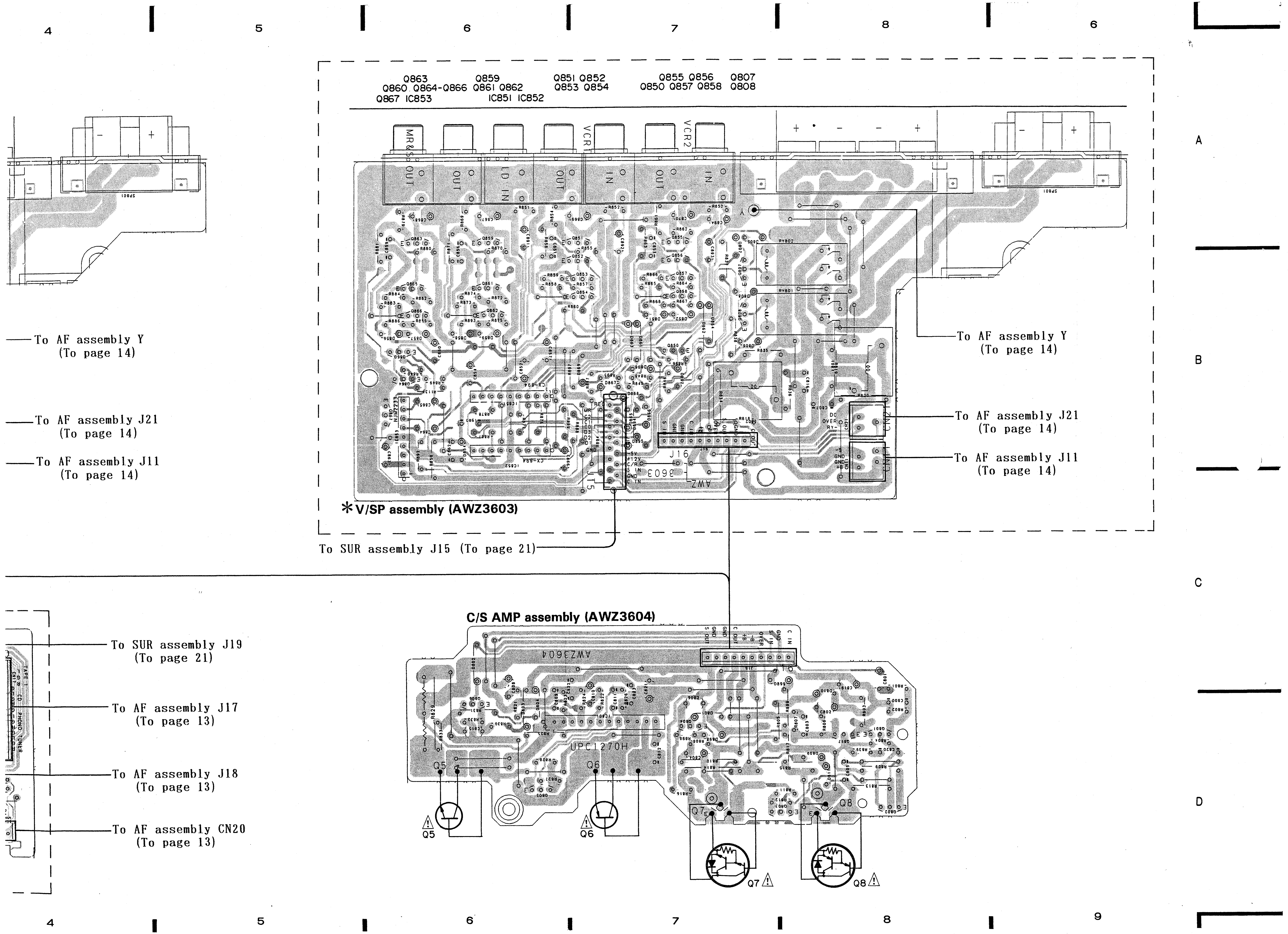
To AF assembly J17
(To page 13)

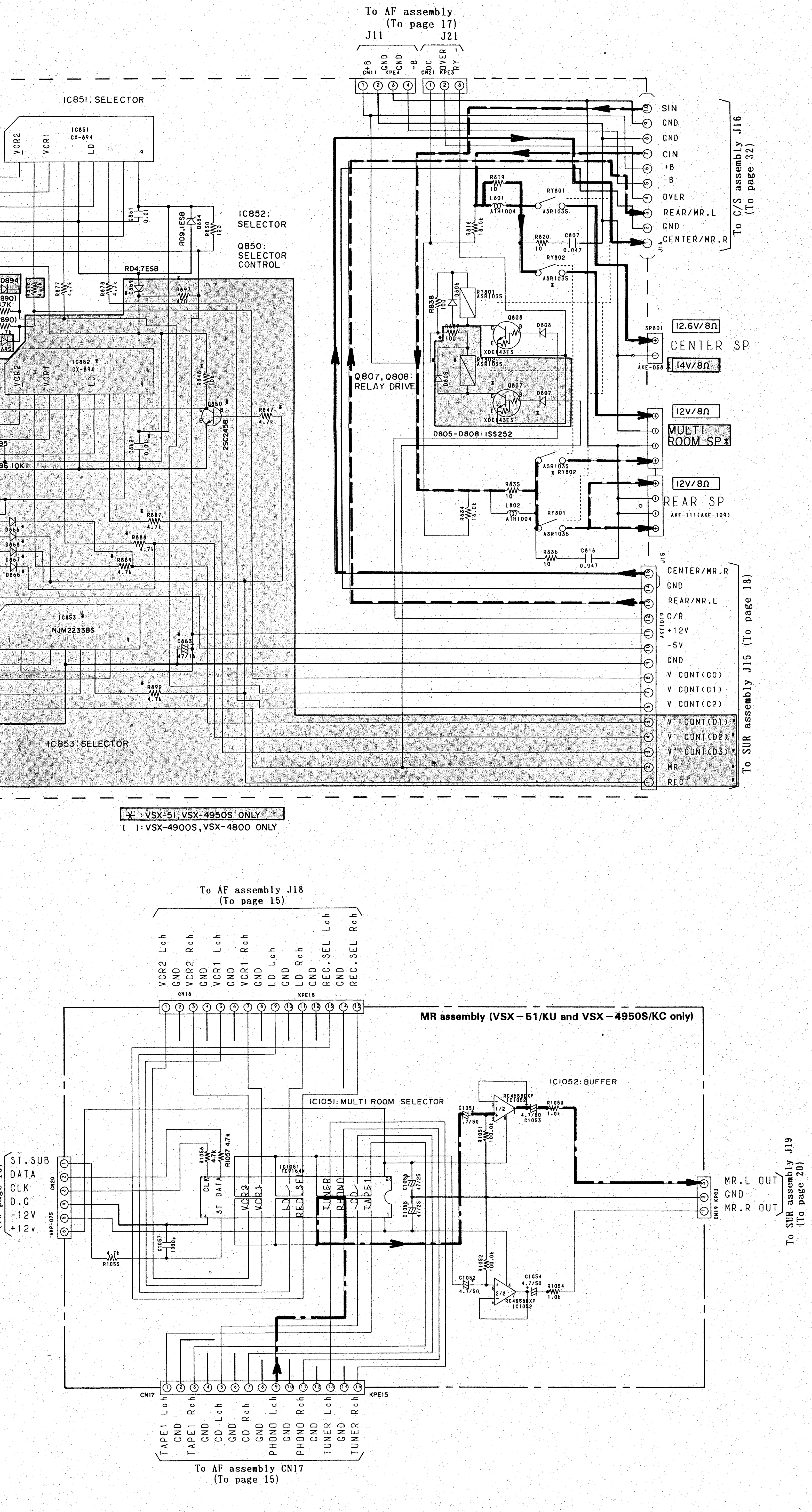
To AF assembly J18
(To page 13)

To AF assembly CN20
(To page 13)

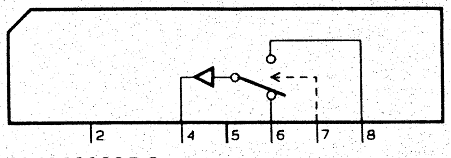
C/S AMP assembly (AWZ360


AWZ3604
UPC1270H
Q5
Q6

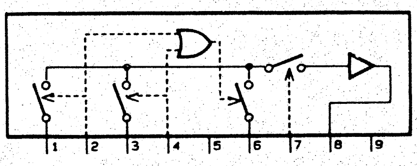

4
5
6
7
8
9
A
B
C
D
Q863
Q860 Q864-Q866
Q867 IC853
Q859
Q861 Q862
IC851 IC852
Q851 Q852
Q853 Q854
Q855 Q856
Q850 Q857 Q858
Q807
Q808
MR&S OUT
OUT
LD IN
OUT
VCR1 IN
VCR2 OUT
IN
SP801
Y
RY801
RY802
CN11
CN12
J16
J15
AWZ 3603
To AF assembly Y (To page 14)
To AF assembly J21 (To page 14)
To AF assembly J11 (To page 14)
*V/SP assembly (AWZ3603)
To SUR assembly J15 (To page 21)
C/S AMP assembly (AWZ3604)
AWZ3604
C IN
GND
S IN
OVER
-B
+B
C OUT
GND
GND
S OUT
UPC1270H
Q5
Q6
Q7
Q8
To SUR assembly J19 (To page 21)
To AF assembly J17 (To page 13)
To AF assembly J18 (To page 13)
To AF assembly CN20 (To page 13)
TAPE 1
CD
PHONO
TUNER


To AF assembly (To page 17)
J11
J21
CN11 KPE4
+B
GND
GND
-B
CN21 KPE3
DC
OVER
RY
IC851: SELECTOR
IC851 CX-894
VCR2
VCR1
LD
IC852: SELECTOR
Q850: SELECTOR CONTROL
RD4.7ESB
RD9.1ESB
IC852 CX-894
IC853 NJM2233BS
IC853: SELECTOR
2SC2458
Q850
Q807, Q808: RELAY DRIVE
D805-D808: 1SS252
XDC143ES
RY801
RY802
ASR1035
ATH1004
L801
L802
R819
R818
R820
C807
R835
R834
R836
C816
R838
R837
R846
R847
R877
R878
R887
R888
R889
R892
R897
C861
C862
C863
D866
D868
D867
D865
D894
SIN
GND
GND
CIN
+B
-B
OVER
REAR/MR.L
GND
CENTER/MR.R
J16
To C/S assembly J16 (To page 32)
SP801
12.6V/8Ω
CENTER SP
AKE-058
14V/8Ω
12V/8Ω
MULTI ROOM SP
12V/8Ω
REAR SP
AKE-111(AKE-109)
J15
AKT1019
CENTER/MR.R
GND
REAR/MR.L
C/R
+12V
-5V
GND
V CONT(C0)
V CONT(C1)
V CONT(C2)
V' CONT(D1)
V' CONT(D2)
V' CONT(D3)
MR
REC
To SUR assembly J15 (To page 18)
To AF assembly J18 (To page 15)
VCR2 Lch
GND
VCR2 Rch
GND
VCR1 Lch
GND
VCR1 Rch
GND
LD Lch
GND
LD Rch
GND
REC.SEL Lch
GND
REC.SEL Rch
CN18
KPE15
MR assembly (VSX-51/KU and VSX-4950S/KC only)
IC1052: BUFFER
IC1051: MULTI ROOM SELECTOR
RC4558XP IC1052
IC1051 TC9164N
C1051
C1052
C1053
C1054
C1055
C1056
C1057
R1051
R1052
R1053
R1054
R1055
R1056
R1057 4.7k
CLK
ST DATA
VCR2
VCR1
LD
REC.SEL
TUNER
PHONO
CD
TAPE1
CN20
AKP-075
ST.SUB
DATA
CLK
D.G
-12V
+12V
CN19 KPC3
MR.L OUT
GND
MR.R OUT
To SUR assembly J19 (To page 20)
CN17
KPE15
TAPE1 Lch
GND
TAPE1 Rch
GND
CD Lch
GND
CD Rch
GND
PHONO Lch
GND
PHONO Rch
GND
TUNER Lch
GND
TUNER Rch
To AF assembly CN17 (To page 15)

✱ : VSX-51, VSX-4950S ONLY
( ): VSX-4900S, VSX-4800 ONLY

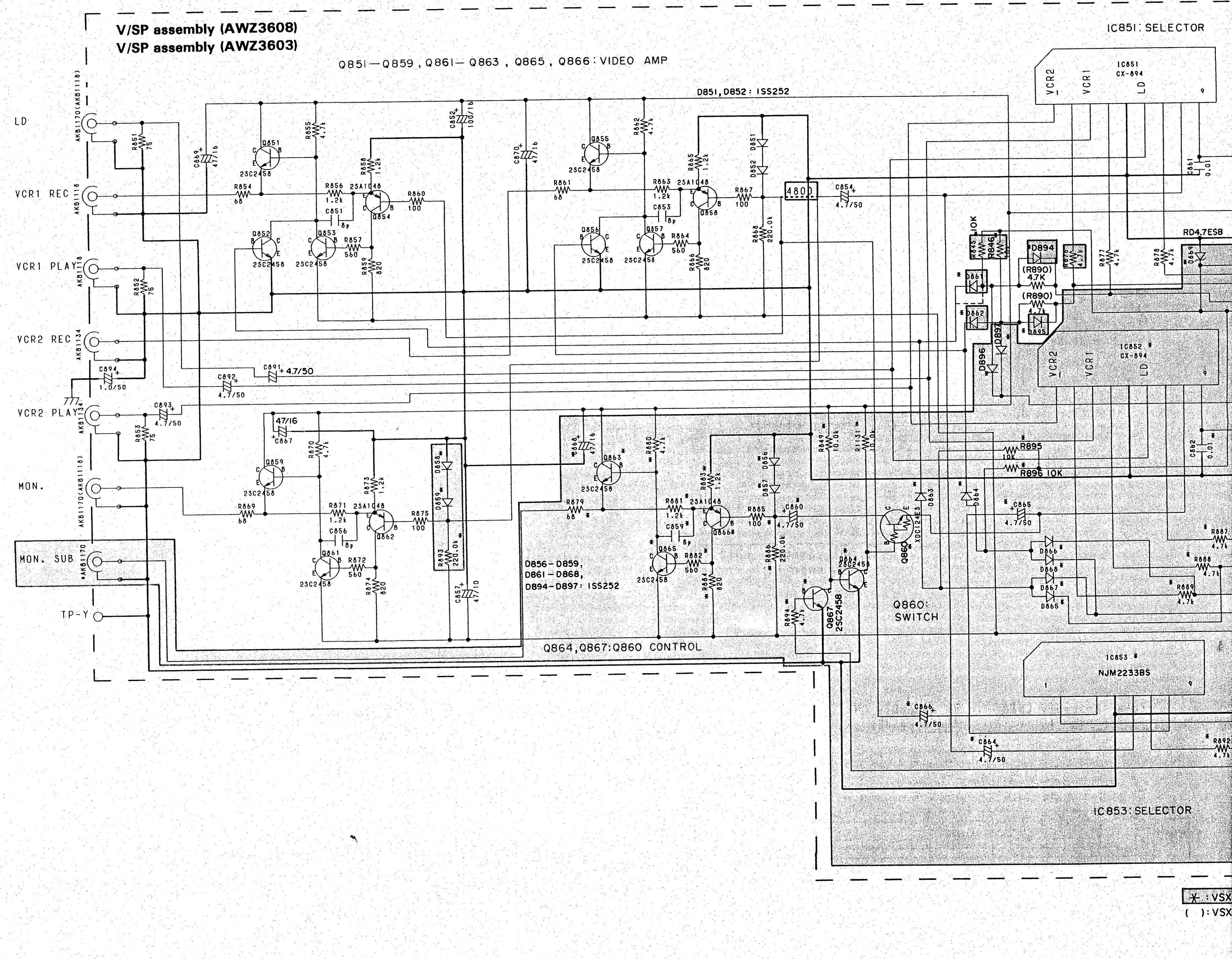


NJM2233BS

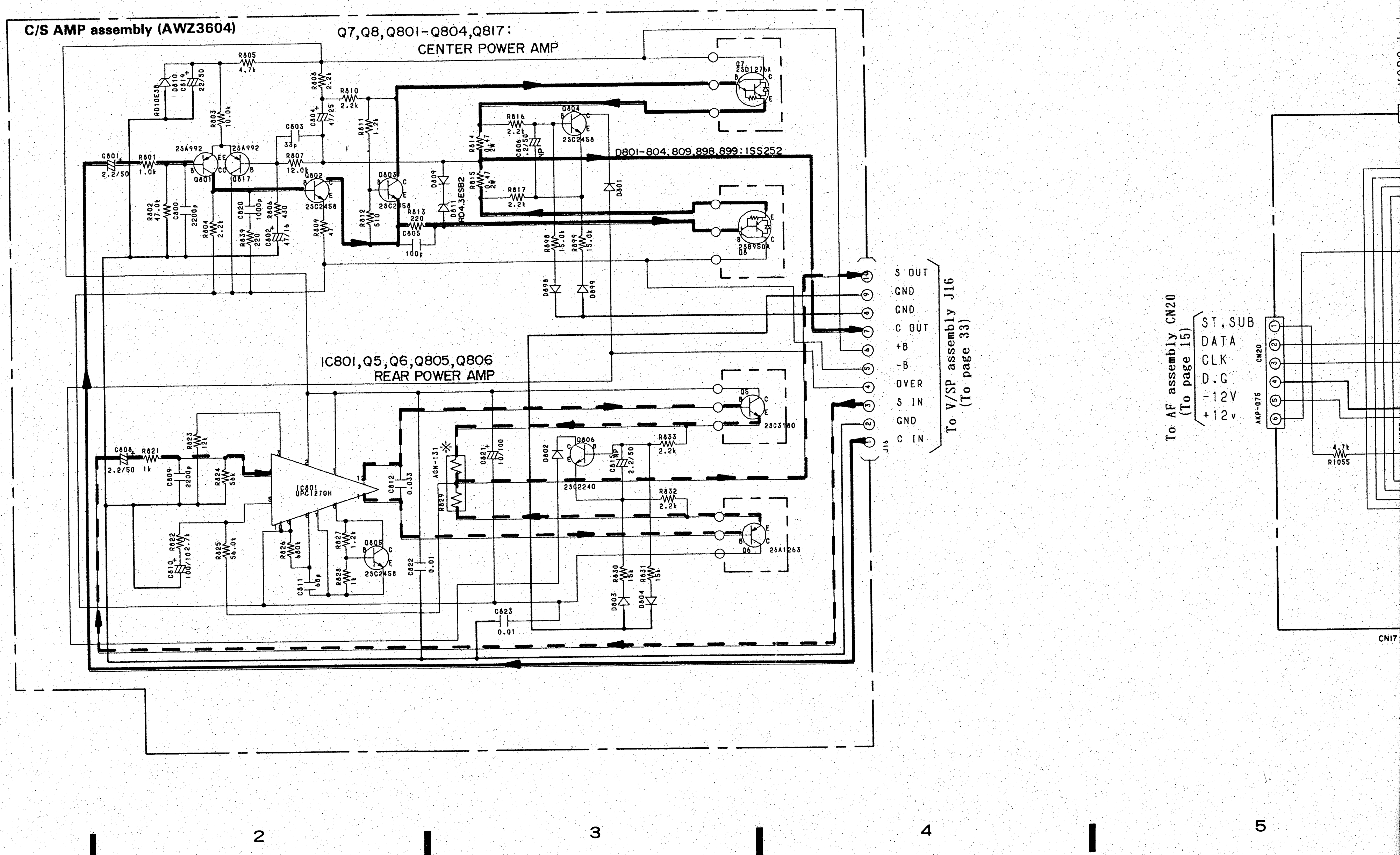


CX894

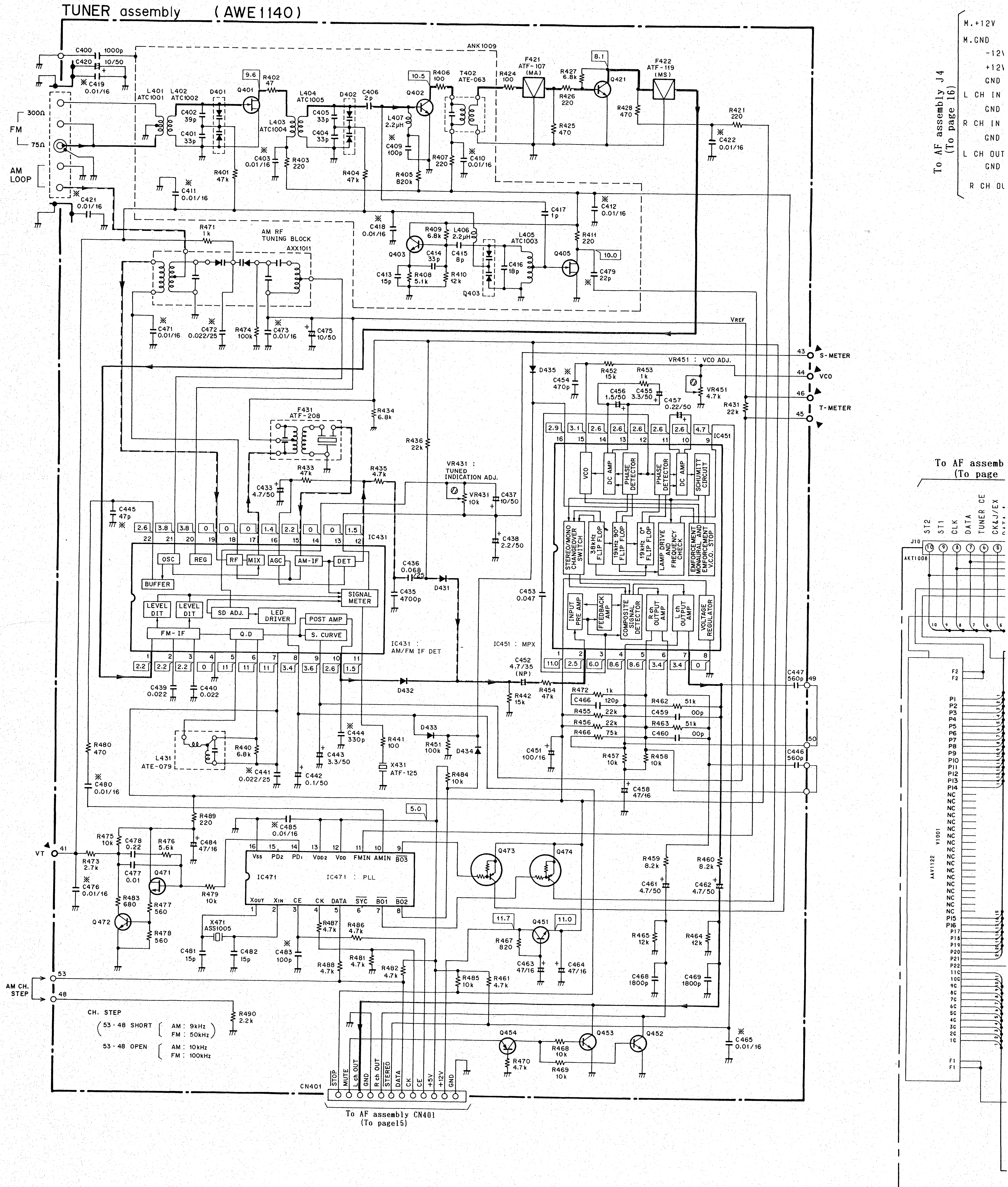
V/SP assembly (AWZ3608)
V/SP assembly (AWZ3603)

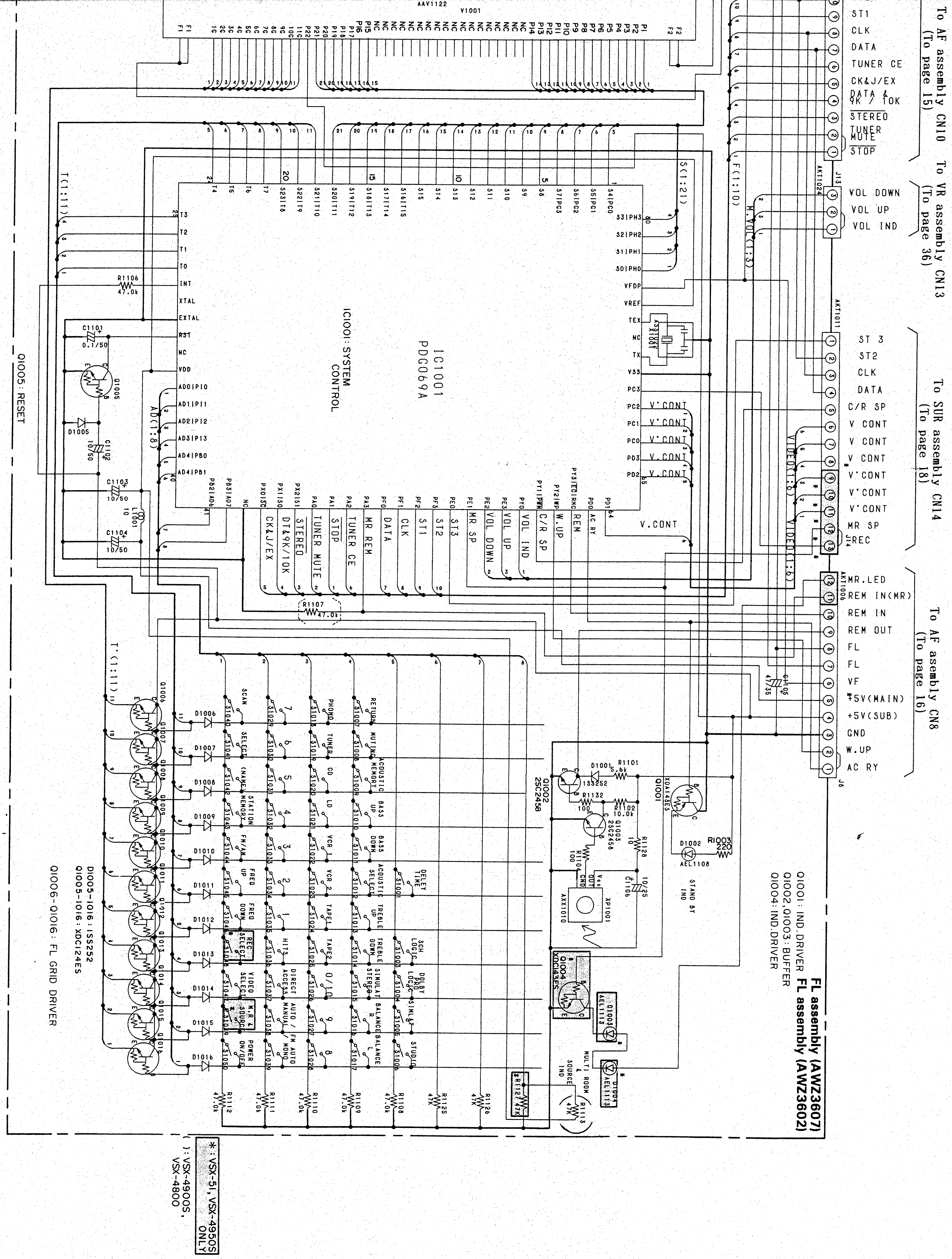

Q851–Q859, Q861–Q863, Q865, Q866: VIDEO AMP
D851, D852: 1SS252
IC851: SELECTOR
IC851 CX-894
VCR2
VCR1
LD
VCR1 REC
VCR1 PLAY
VCR2 REC
VCR2 PLAY
MON.
MON. SUB
TP-Y
AKB1170(AKB1116)
AKB1116
AKB1134
*AKB1170
IC852 CX-894
RD4.7ESB
D856–D859,
D861–D868,
D894–D897: 1SS252
Q864, Q867: Q860 CONTROL
Q860: SWITCH
2SC2458
2SA1048
IC853 NJM2233BS
IC853: SELECTOR
✱: VSX
( ): VSX

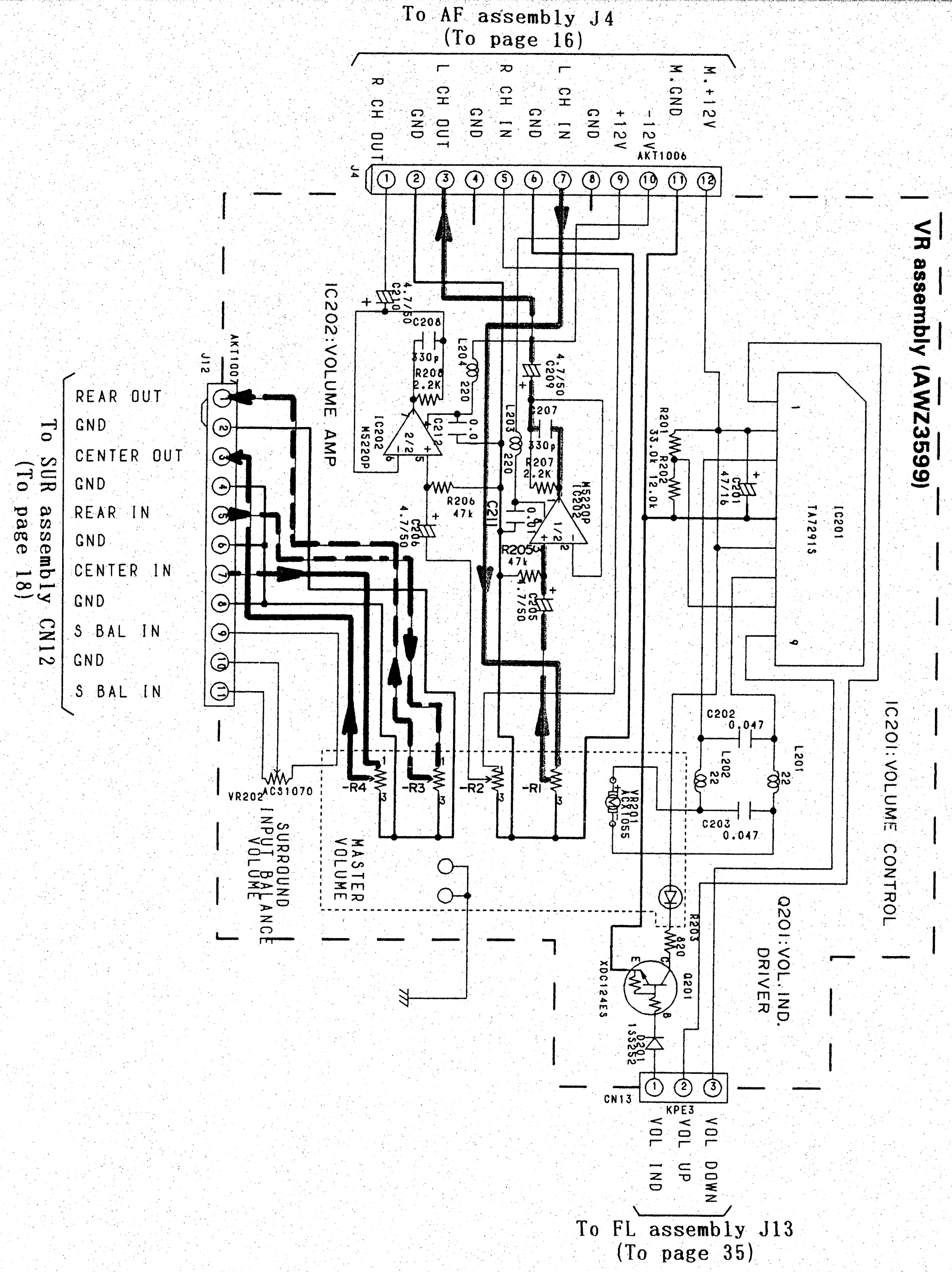
C/S AMP assembly (AWZ3604)


Q7, Q8, Q801–Q804, Q817:
CENTER POWER AMP
D801–804, 809, 898, 899: 1SS252
IC801, Q5, Q6, Q805, Q806
REAR POWER AMP
IC801 UPC1270H
2SA992
2SC2458
2SC2240
2SC3180
2SA1263
2SD1276A
2SB950A
RD10ESB
RD4.3ESB
ACN-131
S OUT
GND
GND
C OUT
+B
-B
OVER
S IN
GND
C IN
J16
To V/SP assembly J16
(To page 33)
To AF assembly CN20
(To page 15)
ST.SUB
DATA
CLK
D.G
-12V
+12v
CN20
AKP-075
R1055
CN17

4.5 TUNER (AWE1140), FL (AWZ3607) and VR assembly (AWZ3599)

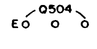
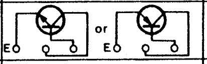
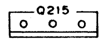
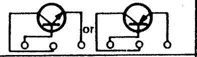
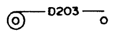
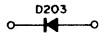
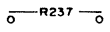
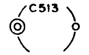
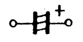
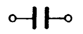

TUNER assembly (AWE1140)
ANK1009
FM 300Ω 75Ω
AM LOOP
C400 1000p
C420 10/50
C419 0.01/16
C421 0.01/16
L401 ATC1001
L402 ATC1002
C402 39p
C401 33p
D401
Q401
R402 47
9.6
R401 47k
C411 0.01/16
L403 ATC1004
L404 ATC1005
C403 0.01/16
R403 220
C405 33p
C404 33p
D402
C406 2p
L407 2.2μH
C409 100p
R404 47k
R405 820k
Q402
10.5
R406 100
T402 ATE-063
R407 220
C410 0.01/16
R424 100
F421 ATF-107 (MA)
R427 6.8k
8.1
Q421
R426 220
R425 470
R428 470
F422 ATF-119 (MS)
R421 220
C422 0.01/16
C412 0.01/16
C417 1p
R411 220
10.0
C479 22p
Q405
L405 ATC1003
C416 18p
Q403
C418 0.01/16
R409 6.8k
L406 2.2μH
C414 33p
C415 8p
C413 15p
R408 5.1k
R410 12k
R471 1k
AM RF TUNING BLOCK AXX1011
C471 0.01/16
C472 0.022/25
R474 100k
C473 0.01/16
C475 10/50
VREF
S-METER
VCO
T-METER
43
44
46
45
VR451 : VCO ADJ.
D435
C454 470p
R452 15k
R453 1k
C456 1.5/50
C455 3.3/50
VR451 4.7k
C457 0.22/50
R431 22k
R434 6.8k
F431 ATF-208
R436 22k
R433 47k
R435 4.7k
C433 4.7/50
VR431 : TUNED INDICATION ADJ.
VR431 10k
C437 10/50
C438 2.2/50
C445 47p
IC431
OSC
REG
RF
MIX
AGC
AM-IF
DET
BUFFER
SIGNAL METER
LEVEL DIT
SD ADJ.
LED DRIVER
POST AMP
FM-IF
Q.D
S. CURVE
C436 0.068/25
C435 4700p
D431
IC431 : AM/FM IF DET
C453 0.047
IC451 : MPX
IC451
VCO
DC AMP
PHASE DETECTOR
SCHUMITT CIRCUIT
STEREO/MONO CHANGEOVER SWITCH
38kHz FLIP FLOP
19kHz 90° FLIP FLOP
19kHz 0° FLIP FLOP
LAMP DRIVE AND FREQUENCY CHECK
ENFORCEMENT MONAURAL AND ENFORCEMENT V.C.O. STOP
INPUT PRE AMP
FEEDBACK AMP
COMPOSITE SIGNAL DETECTOR
R ch OUTPUT AMP
L ch OUTPUT AMP
VOLTAGE REGULATOR
C439 0.022
C440 0.022
D432
C452 4.7/35 (NP)
R442 15k
R454 47k
R472 1k
C466 120p
R455 22k
R456 22k
R466 75k
R462 51k
C459 00p
R463 51k
C460 00p
C447 560p
C446 560p
49
50
L431 ATE-079
R440 6.8k
C441 0.022/25
C442 0.1/50
C443 3.3/50
C444 330p
R441 100
X431 ATF-125
D433
R451 100k
D434
R484 10k
C451 100/16
R457 10k
R458 10k
C458 47/16
R480 470
C480 0.01/16
R489 220
C484 47/16
C485 0.01/16
5.0
VT
41
R475 10k
R473 2.7k
C476 0.01/16
C478 0.22
C477 0.01
R476 5.6k
Q471
R477 560
R483 680
Q472
R478 560
R479 10k
IC471
IC471 : PLL
Vss PD2 PD1 VDD2 VDD FMIN AMIN BO3
XOUT XIN CE CK DATA SYC BO1 BO2
X471 ASS1005
C481 15p
C482 15p
C483 100p
R487 4.7k
R486 4.7k
R488 4.7k
R481 4.7k
R482 4.7k
Q473
Q474
Q451
11.7
11.0
R467 820
C463 47/16
C464 47/16
R485 10k
R461 4.7k
R459 8.2k
R460 8.2k
C461 4.7/50
C462 4.7/50
R465 12k
R464 12k
C468 1800p
C469 1800p
AM CH. STEP
53
48
CH. STEP
53 - 48 SHORT AM : 9kHz FM : 50kHz
53 - 48 OPEN AM : 10kHz FM : 100kHz
R490 2.2k
Q454
Q453
Q452
R468 10k
R469 10k
R470 4.7k
C465 0.01/16
CN401
STOP MUTE L ch OUT GND R ch OUT STEREO DATA CK CE +5V +12V GND
To AF assembly CN401 (To page15)
To AF assembly J4 (To page 16)
M.+12V M.GND -12V +12V GND L CH IN GND R CH IN GND L CH OUT GND R CH OUT
To AF assemb (To page
ST2 ST1 CLK DATA TUNER CE CK&J/EX
J10
AKT1008
AAV1122 V1001
F2 F2 P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 NC P15 P16 P17 P18 P19 P20 P21 P22 11C 10C 9C 8C 7C 6C 5C 4C 3C 2C 1C F1 F1


FL assembly (AWZ3607)
FL assembly (AWZ3602)
Q1001: IND.DRIVER
Q1002,Q1003: BUFFER
Q1004: IND.DRIVER
IC1001: SYSTEM CONTROL
IC1001 PDC069A
V1001
AAV1122
Q1005: RESET
D1005-1016: 1SS252
Q1005-1016: XDC124ES
Q1006-Q1016: FL GRID DRIVER
*: VSX-5I, VSX-4950S ONLY
( ): VSX-4900S, VSX-4800
To AF assembly CN10 (To page 15)
To VR assembly CN13 (To page 36)
To SUR assembly CN14 (To page 18)
To AF assembly CN8 (To page 16)
ST1
CLK
DATA
TUNER CE
CK&J/EX
DATA & 9K / 10K
STEREO
TUNER MUTE
STOP
VOL DOWN
VOL UP
VOL IND
ST3
ST2
CLK
DATA
C/R SP
V CONT
V CONT
V CONT
V'CONT
V'CONT
V'CONT
MR SP
REC
MR.LED
REM IN(MR)
REM IN
REM OUT
FL
FL
VF
+5V(MAIN)
+5V(SUB)
GND
W.UP
AC RY
J13
J14
J6
AKT1024
AKT1011
AKT1005
Q1002 2SC2458
Q1003 2SC2458
Q1001 XDA144ES
D1002 AEL1108
STAND BY IND
D1003 AEL1113
D1004 AEL1113
MULTI SOURCE IND
ROOM IND
XP1001
AXX1010
R1106 47.0k
R1107 47.0k
C1101 0.1/50
C1102 10/50
C1103 10/50
C1104 10/50
D1006
D1007
D1008
D1009
D1010
D1011
D1012
D1013
D1014
D1015
D1016
SCAN
SELECT
STATION MEMORY
FM/AM
FREQ UP
FREQ DOWN
REC SELECT
VIDEO SELECT
SOURCE
POWER ON/OFF
TUNER
CD
LD
VCR
TAPE1
TAPE2
PHONO
HITS
DIRECT ACCESS
AUTO/MANUAL
FM AUTO/MONO
RETURN
MUTING
MEMORY
ACOUSTIC
BASS UP
BASS DOWN
ACOUSTIC SELECT
TREBLE UP
TREBLE DOWN
BALANCE R
BALANCE L
DELAY TIME
3CH LOGIC
DOLBY LOGIC
SIMUL STEREO
STUDIO
V.CONT
S(1:21)
F(1:10)
T(1:11)
T'(1:11)
AD(1:8)


VR assembly (AWZ3599)
To AF assembly J4 (To page 16)
To SUR assembly CN12 (To page 18)
To FL assembly J13 (To page 35)
IC202: VOLUME AMP
IC201: VOLUME CONTROL
IC201 TA7291S
IC202 M5220P
Q201: VOL.IND. DRIVER
Q201 XDC124ES
M.+12V
M.GND
-12V
+12V
GND
L CH IN
GND
R CH IN
GND
L CH OUT
GND
R CH OUT
AKT1006
J4
J12
AKT1007
REAR OUT
GND
CENTER OUT
GND
REAR IN
GND
CENTER IN
GND
S BAL IN
GND
S BAL IN
VR202 ACS1070
SURROUND INPUT BALANCE VOLUME
MASTER VOLUME
CN13
KPE3
VOL DOWN
VOL UP
VOL IND
L201
L202
C202 0.047
C203 0.047
R206 47k
R207 2.2K
R208 2.2K

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

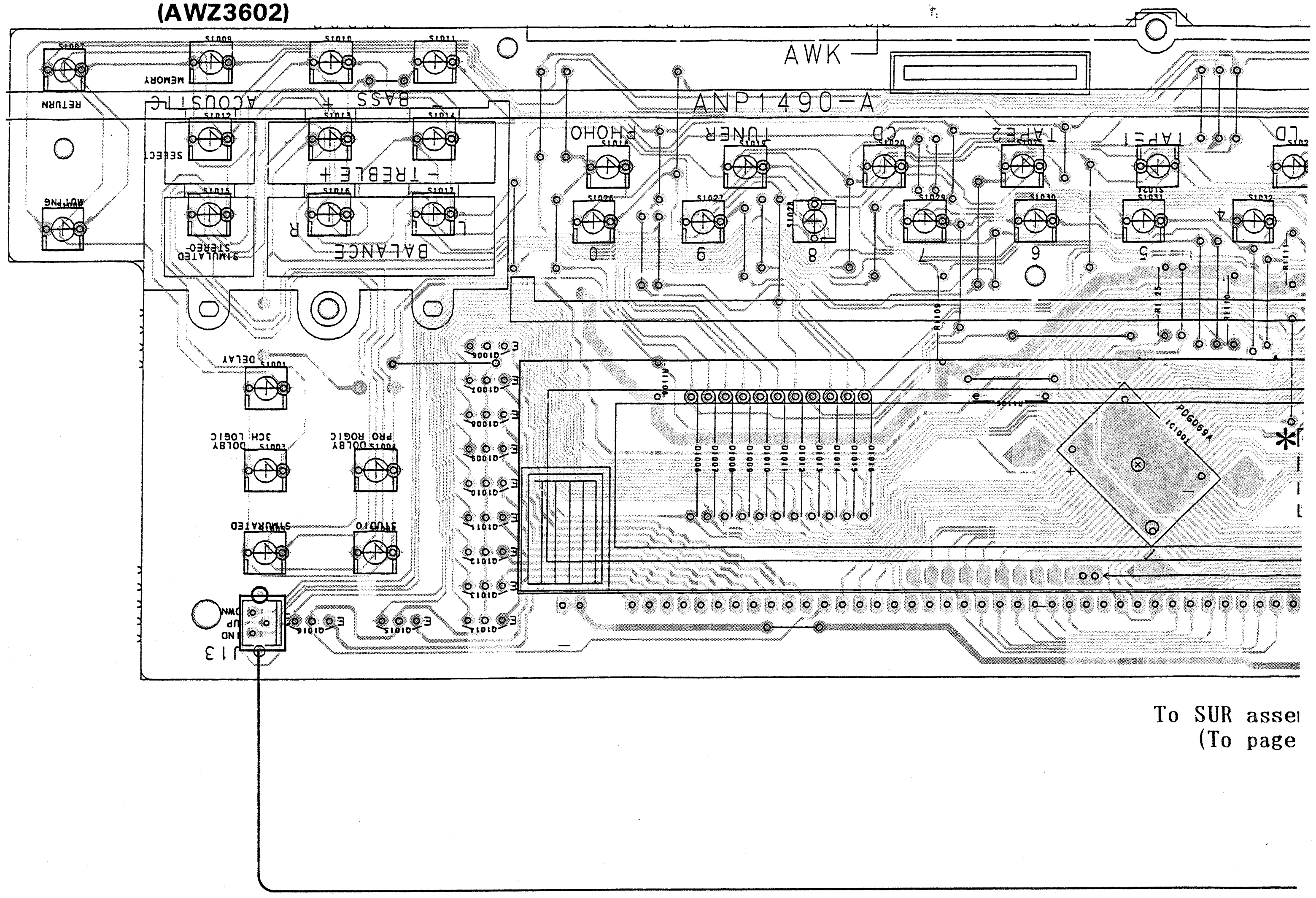
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
 E Q504	 or	Transistor
 Q215	 or	Radiator type transistor
 D203	 D203	Diode
 R237	R237	Resistor
 C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

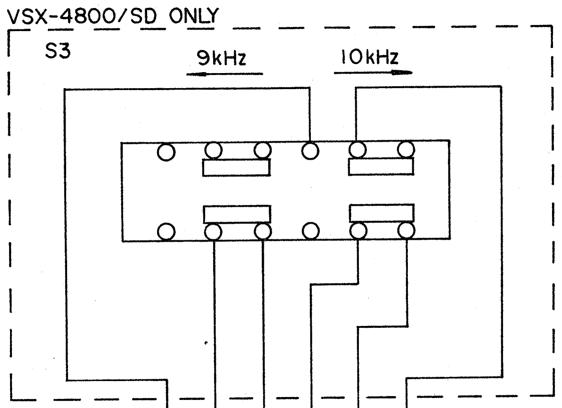
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

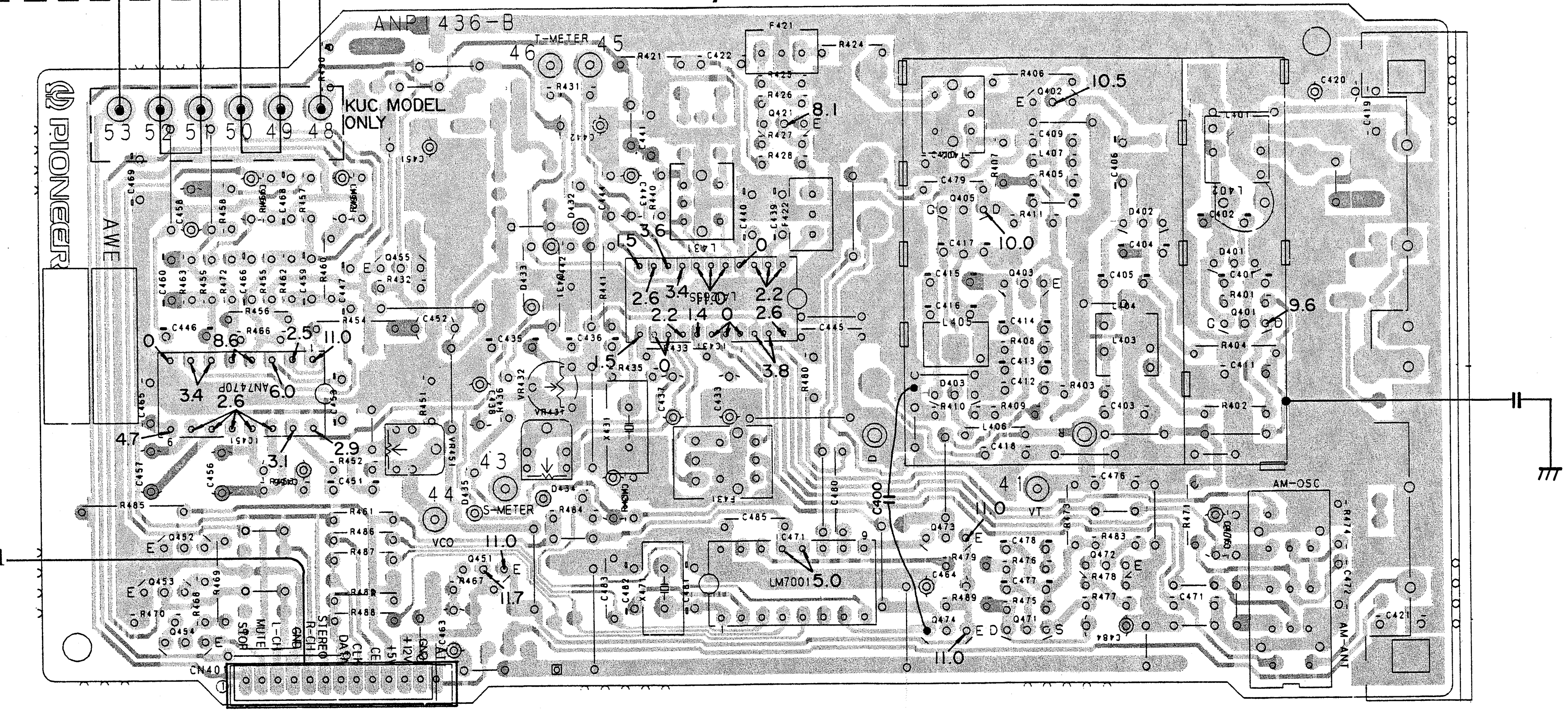
FL assembly (AWZ3607)
(AWZ3602)


AWK
ANP1490-A
RETURN
MEMORY
ACOUSTIC
BASS
SELECT
TREBLE
BALANCE
STEREO-SIMULATED
MUTING
PHONO
TUNER
CD
TAPE2
TAPE1
DELAY
DOLBY 3CH LOGIC
DOLBY PRO LOGIC
SIMULATED
STUDIO
UP
DOWN
PDG069A
J13

To SUR asse
(To page


VSX-4800/SD ONLY
S3
9kHz
10kHz

TUNER assembly (AWE1140)

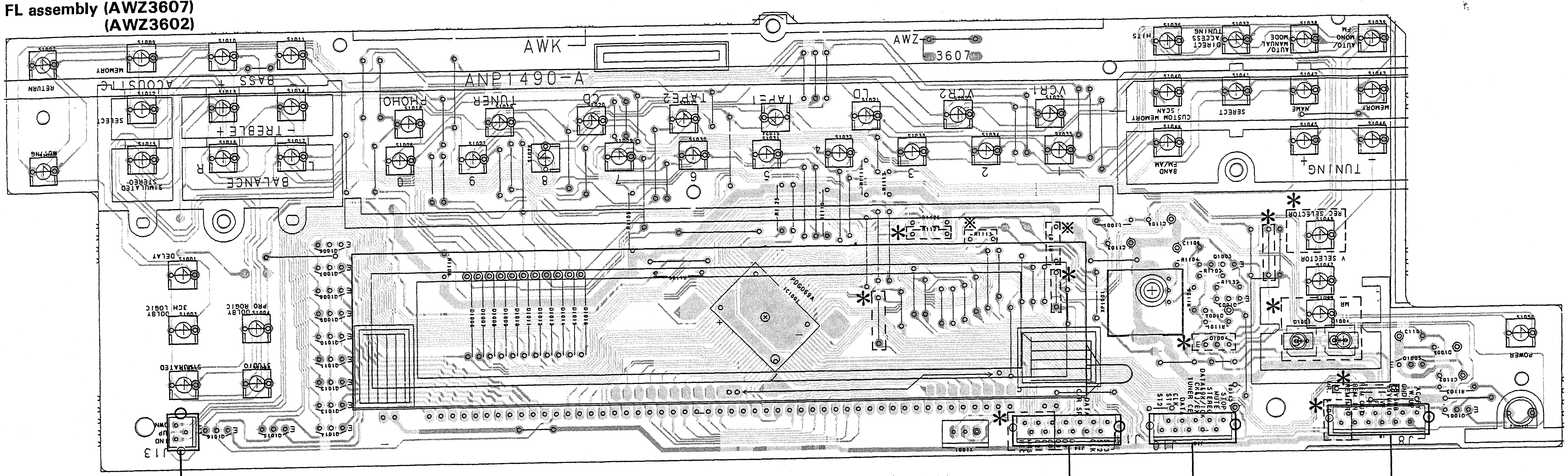

ANP1436-B
T-METER
46
45
53 52 51 50 49 48
KUC MODEL ONLY
PIONEER
AWE
10.5
8.1
10.0
9.6
3.6
2.6
3.4
2.2
1.4
2.6
3.8
8.6
2.5
11.0
3.4
6.0
2.6
4.7
3.1
2.9
43
44
41
S-METER
VCO
11.0
11.7
LM7001
5.0
11.0
11.0
VT
AM-OSC
AM-ANT
CN401
STOP
MUTE
STEREO
DATA
CLK
CE
+12V

To SUR assembly CN12-
(To page 22)

To AF assembly J4
(To page 13)

To AF assembly CN401
(To page 13)

FL assembly (AWZ3607)
(AWZ3602)

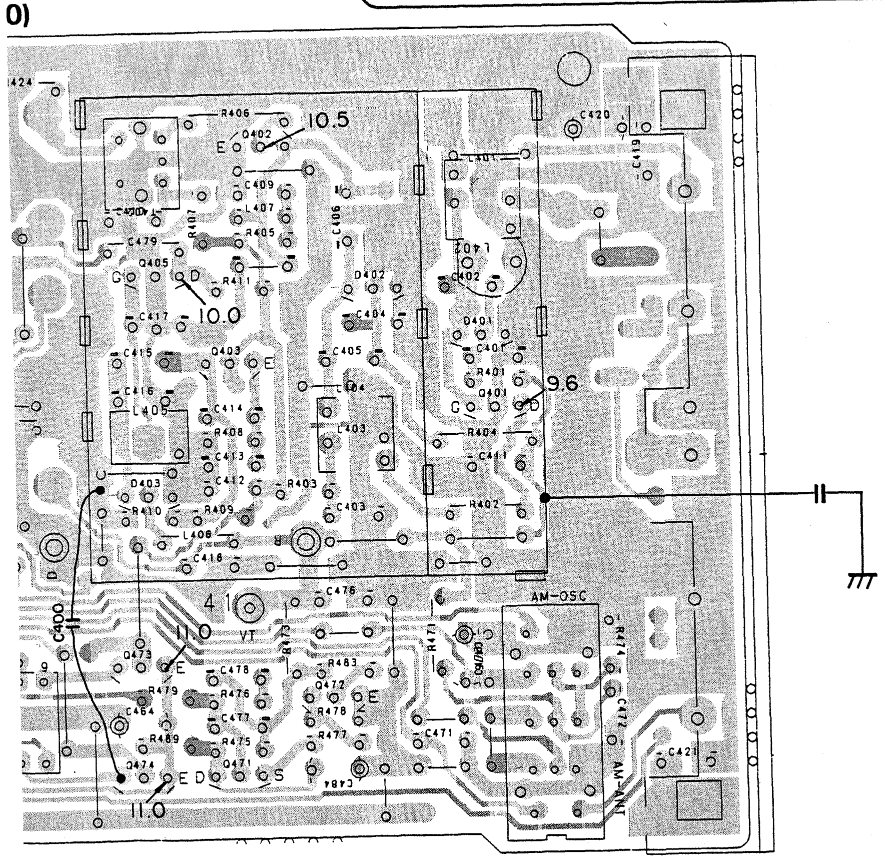

AWK
AWZ
3607
ANP1490-A
TUNER
PHONO
CD
TAPE2
TAPE1
LD
VCR2
VCR1
RETURN
MEMORY
ACOUSTIC
BASS
TREBLE
BALANCE
SELECT
MUTING
SIMULATED STEREO
DELAY
DOLBY 3CH LOGIC
PRO LOGIC
CUSTOM MEMORY
SCAN
SELECT
NAME
MEMORY
BAND FM/AM
TUNING
REC SELECTOR
V SELECTOR
MR
POWER
PD6069A
J13
J11
J8

To SUR assembly CN14
(To page 21)

To AF assembly CN10
(To page 13)

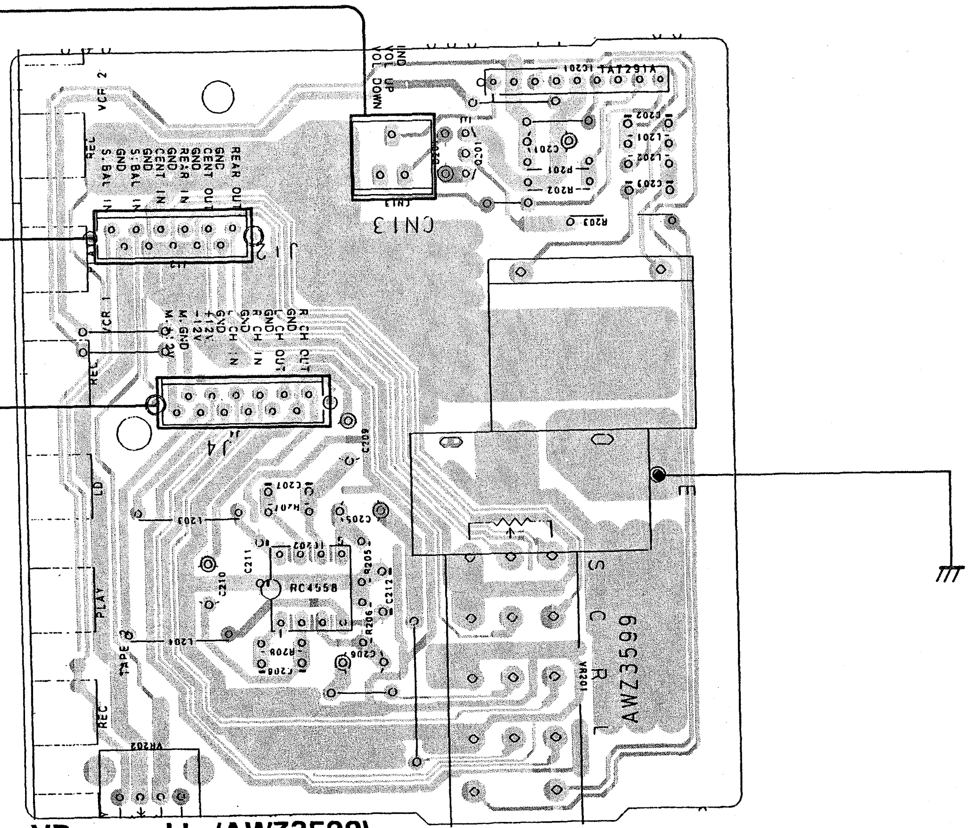
To AF assembly CN8
(To page 14)

0)


10.5
10.0
9.6
11.0
AM-OSC

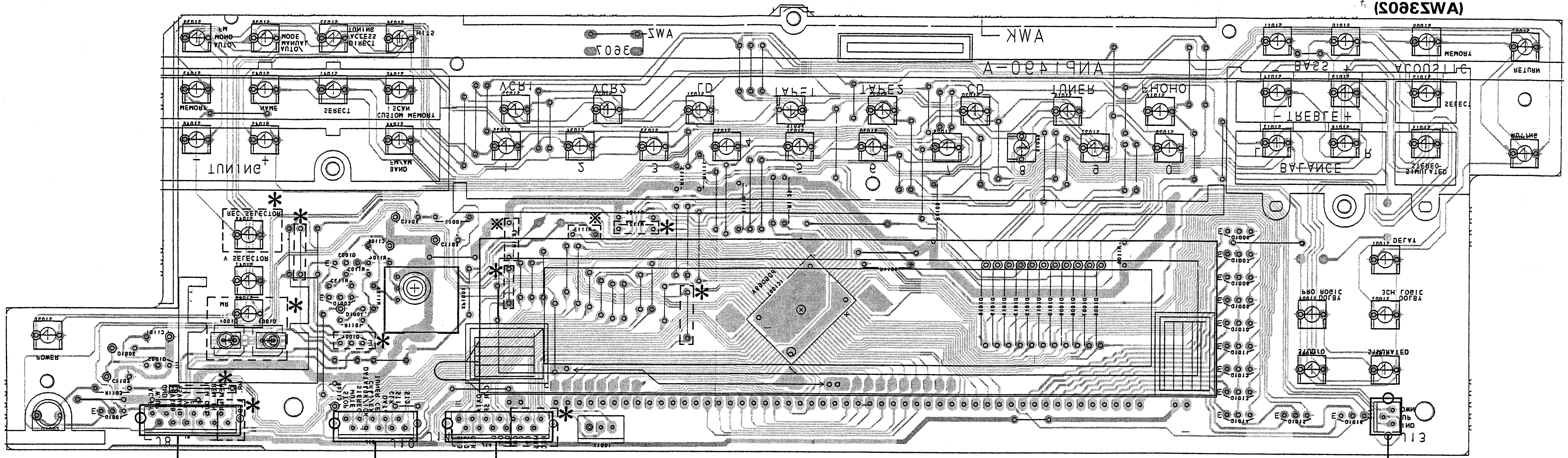
To SUR assembly CN12
(To page 22)

To AF assembly J4
(To page 13)


CN13
J12
J4
RC4558
AWZ3599
VCR 2
VCR 1
LD
PLAY
TAPE
REC

VR assembly (AWZ3599)

FL assembly (AWZ3607)
(AWZ3602)

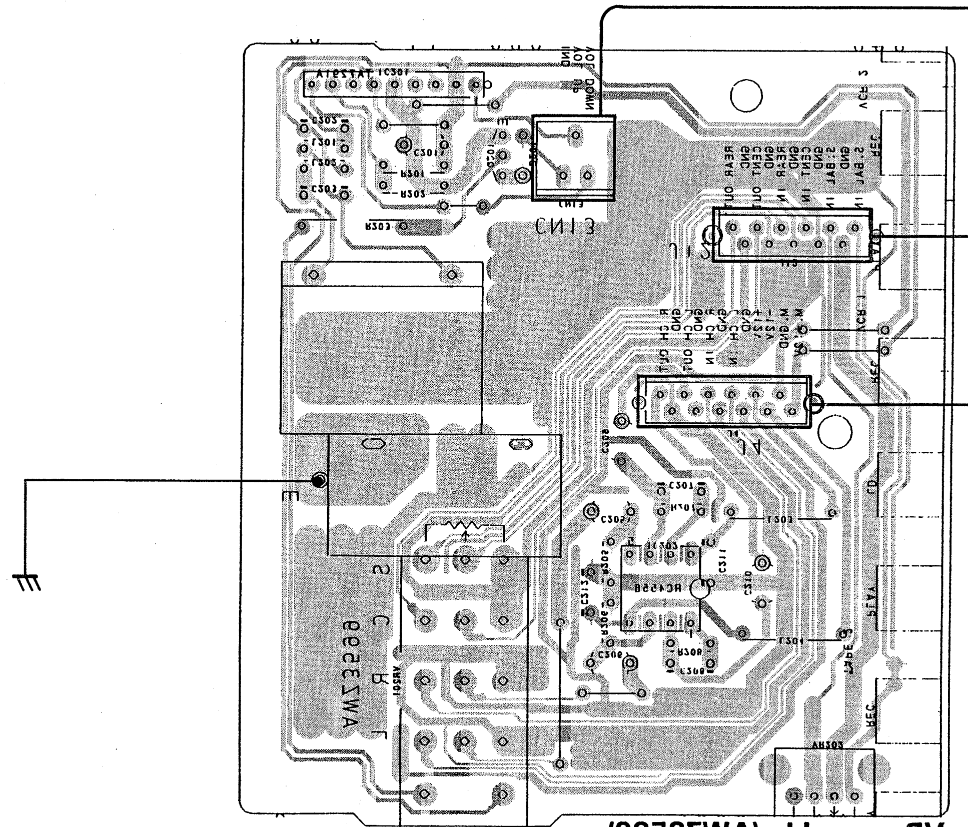

A
B
FM MONO AUTO
MODE MANUAL AUTO
TUNING ACCESS DIRECT
MEMORY
NAME
SELECT
CUSTOM MEMORY
TUNING
BAND
AWZ 3607
AWK
ANP1490-A
VCR1
VCR2
LD
TAPE1
TAPE2
CD
TUNER
PHONO
1
2
3
4
5
6
7
8
9
0
BASS
TREBLE
BALANCE
ACOUSTIC
MEMORY
RETURN
SELECT
MUTING
STEREO SIMULATED
REC SELECTOR
V SELECTOR
RM
DELAY
PRO LOGIC DOLBY
3CH LOGIC DOLBY
POWER

To SUR assembly CN14
(To page 21)

To AF assembly CN10
(To page 13)

To AF assembly CN8
(To page 14)

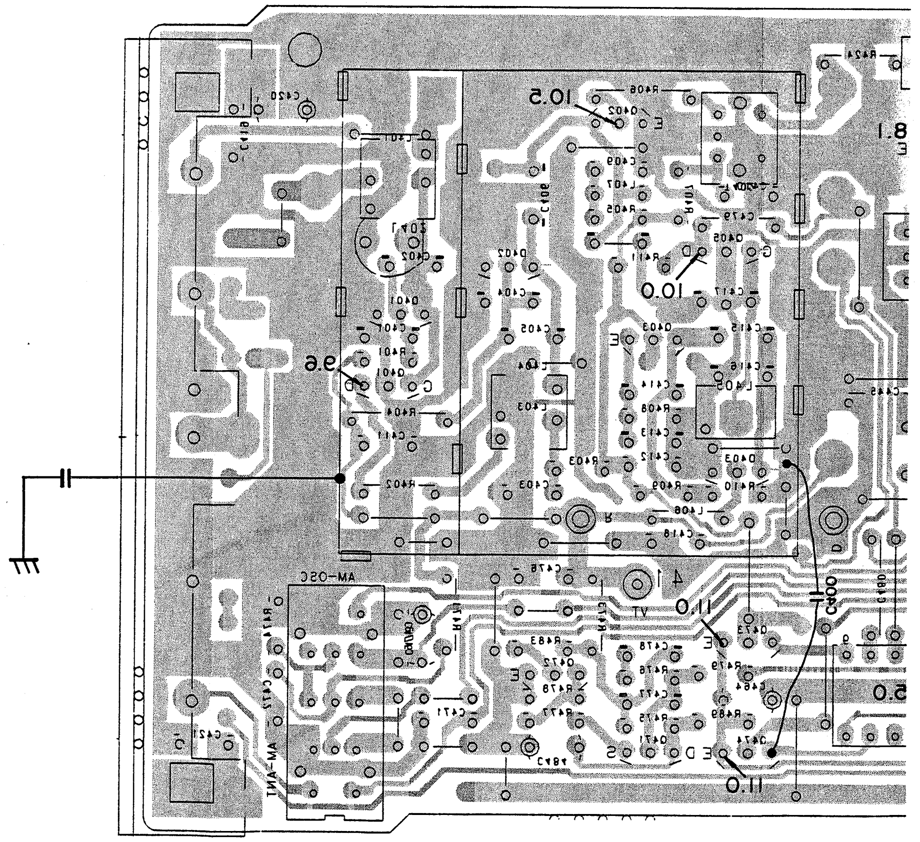
140)


C
D
CN13
AWZ3599
NJM4558

To SUR assembly CN12
(To page 22)

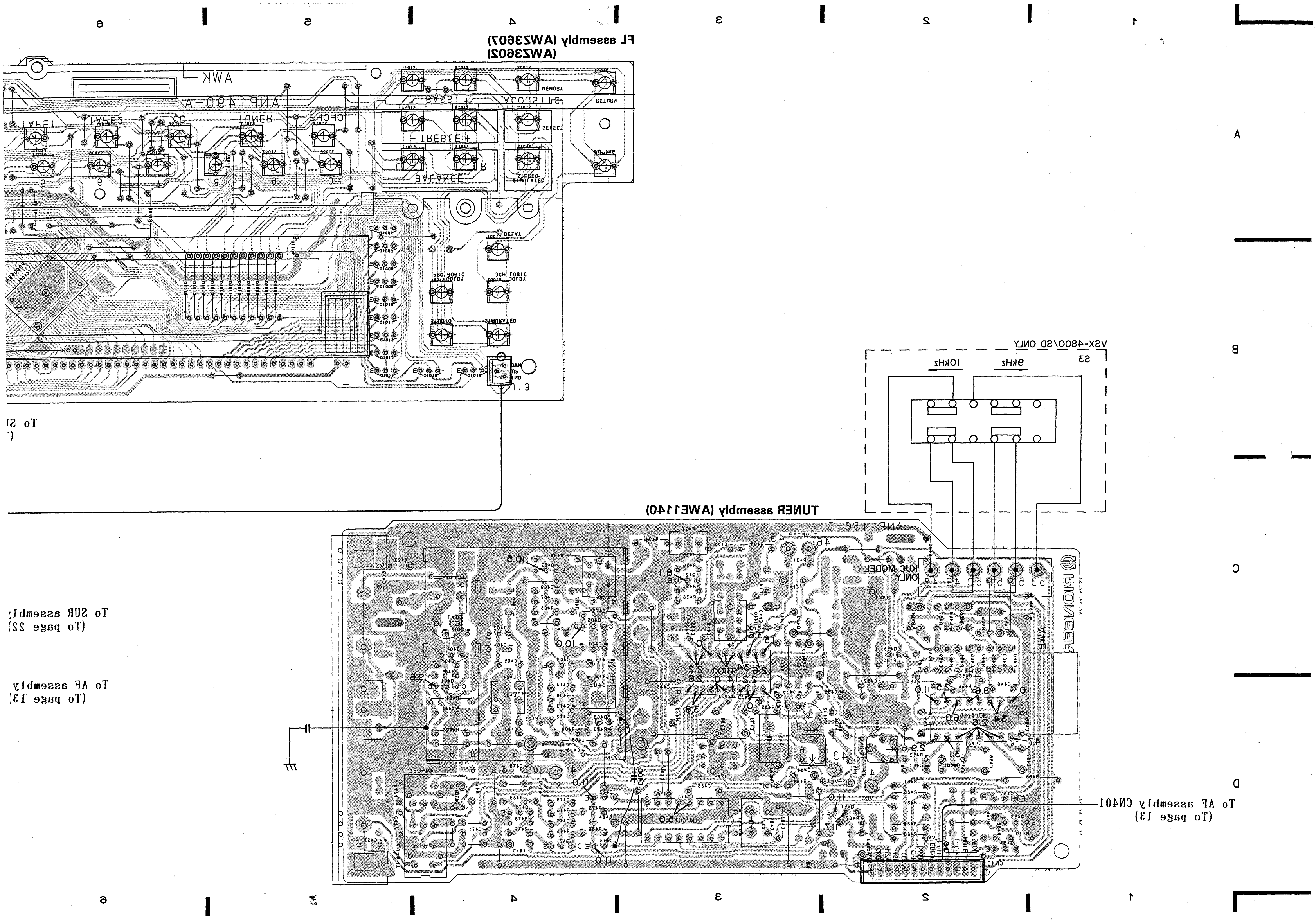
To AF assembly J4
(To page 13)

VR assembly (AWZ3599)

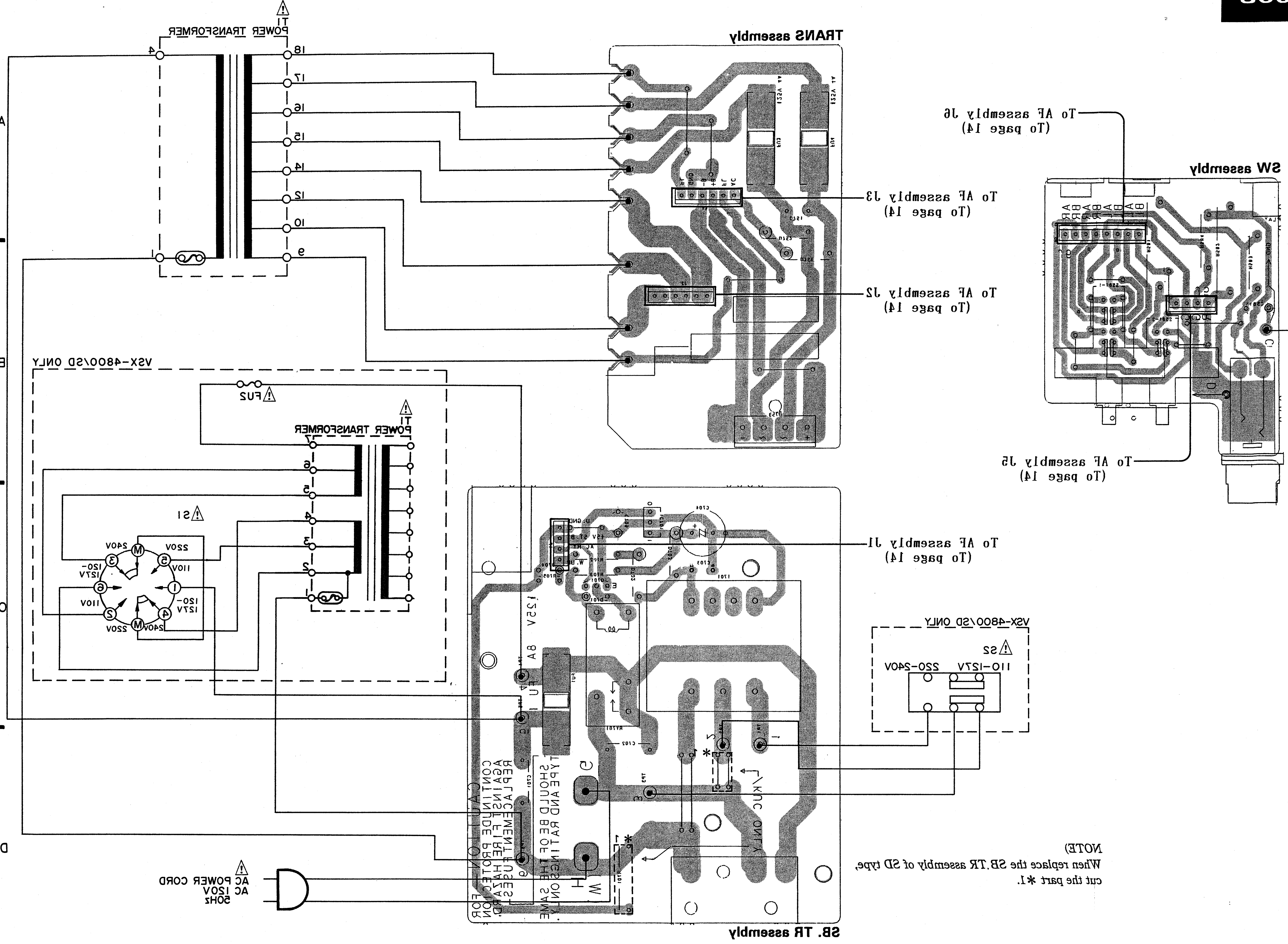

10.5
10.0
9.6
11.0
OSC-MA

FL assembly (AWZ3607)
(AWZ3602)

TUNER assembly (AWE1140)

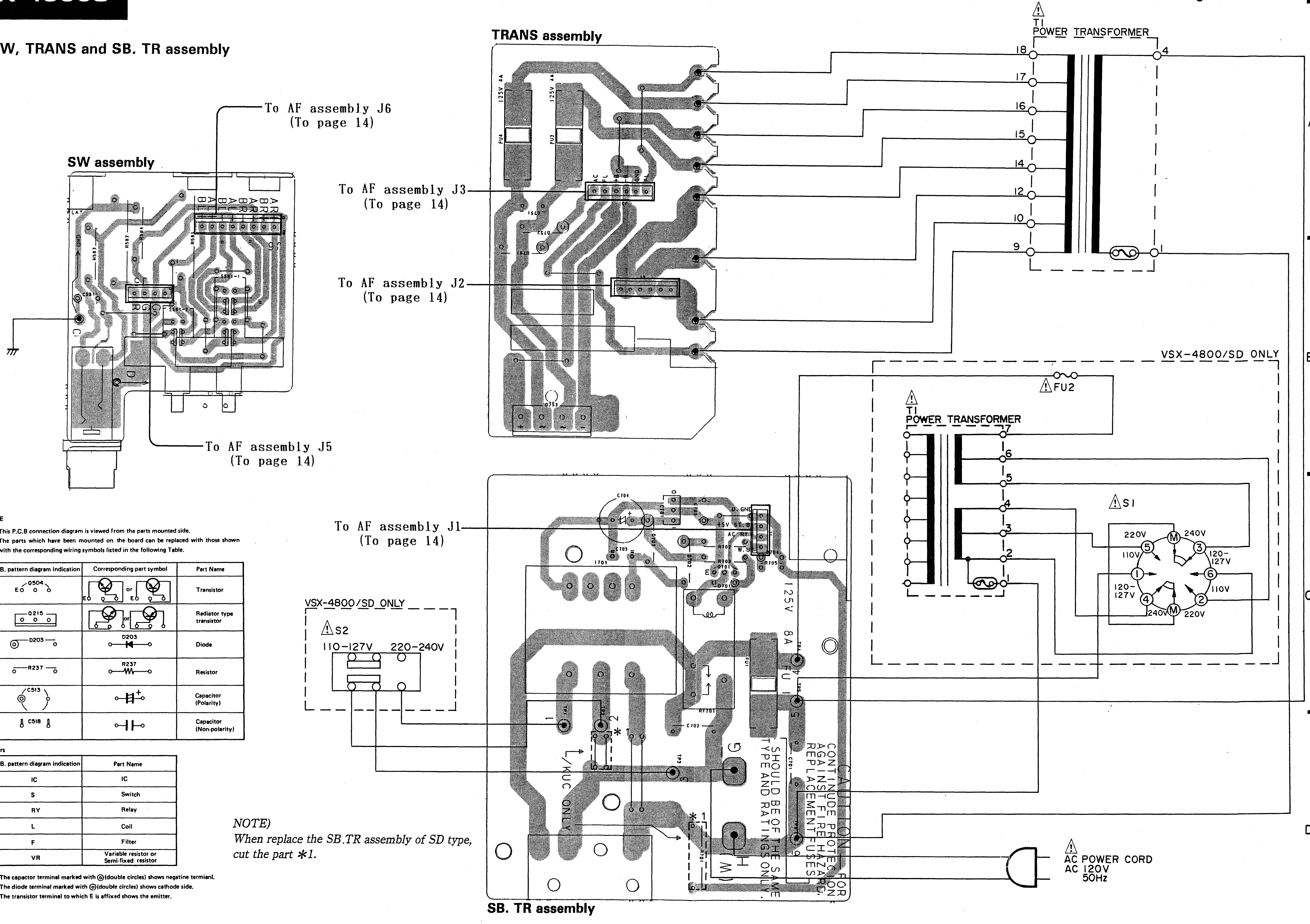


1
2
3
4
5
6
A
B
C
D
ANP1490-A
AWK
BASS
TREBLE
BALANCE
MEMORY
RETURN
SELECT
STEREO-SIMULATED
TAPE1
TAPE2
CD
TUNER
PHONO
DELAY
DOLBY PRO LOGIC
DOLBY 3CH LOGIC
VSX-4800/SD ONLY
S3
9kHz
10kHz
ANP1436-B
KUC MODEL ONLY
PIONEER
AWE
AM-OSC
S-METER
T-METER
VCO
CN401
To SU
To SUR assembly
(To page 22)
To AF assembly
(To page 13)
To AF assembly CN401
(To page 13)


TRANS assembly
SW assembly
SB. TR assembly
T1 POWER TRANSFORMER
18
17
16
15
14
12
10
9
4
1
To AF assembly J6 (To page 14)
To AF assembly J3 (To page 14)
To AF assembly J2 (To page 14)
To AF assembly J1 (To page 14)
To AF assembly J5 (To page 14)
VSX-4800/SD ONLY
FU2
T1 POWER TRANSFORMER
S1
220V
240V
110V
120-127V
VSX-4800/SD ONLY
S2
110-127V
220-240V
AC POWER CORD
AC 120V
50Hz
125V
8A
CAUTION FOR CONTINUED PROTECTION AGAINST FIRE HAZARD REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATING ONLY.
KU, C ONLY
*1

NOTE)
When replace the SB.TR assembly of SD type,
cut the part *1.

4.6 SW, TRANS and SB. TR assembly


SW assembly
To AF assembly J6
(To page 14)
AR
BR
AR
BR
AL
BL
AL
BL
GND
R583
R582
R584
R58
S581-1
S581-2
C581
PLAY
To AF assembly J5
(To page 14)
TRANS assembly
125V 4A
125V 4A
FU4
FU3
To AF assembly J3
(To page 14)
AC
FL
+B
GND
FL
To AF assembly J2
(To page 14)
D753
⚠ T1
POWER TRANSFORMER
18
17
16
15
14
12
10
9
4
1
VSX-4800/SD ONLY
⚠ FU2
⚠ T1
POWER TRANSFORMER
7
6
5
4
3
2
1
⚠ S1
220V
240V
110V
120-127V
120-127V
110V
240V
220V
M
M
To AF assembly J1
(To page 14)
C704
IC701
C705
D703
D702
D. GND
+5V ST. B
AC RY
W. UP
R702
R703
Q701
D701
D704
R705
I701
125V 8A
FU1
FU 1
TP4
TP5
TP1
TP2
TP3
TP6
RY701
C702
C701
R701
G
H
(W)
/KUC ONLY
*1
*1
CAUTION - FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
VSX-4800/SD ONLY
⚠ S2
110-127V
220-240V
⚠ AC POWER CORD
AC 120V
50Hz
SB. TR assembly

NOTE)
When replace the SB.TR assembly of SD type, cut the part ∗1.

NOTE

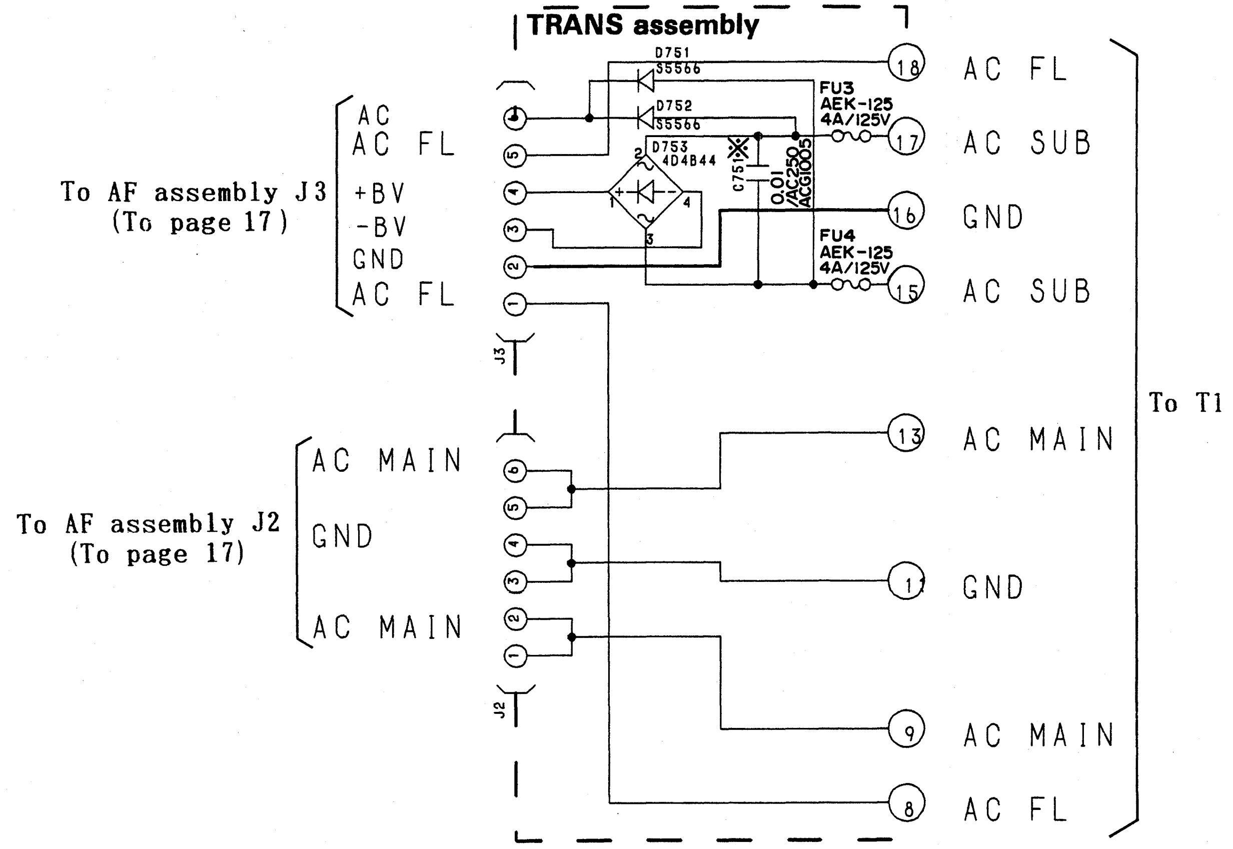
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

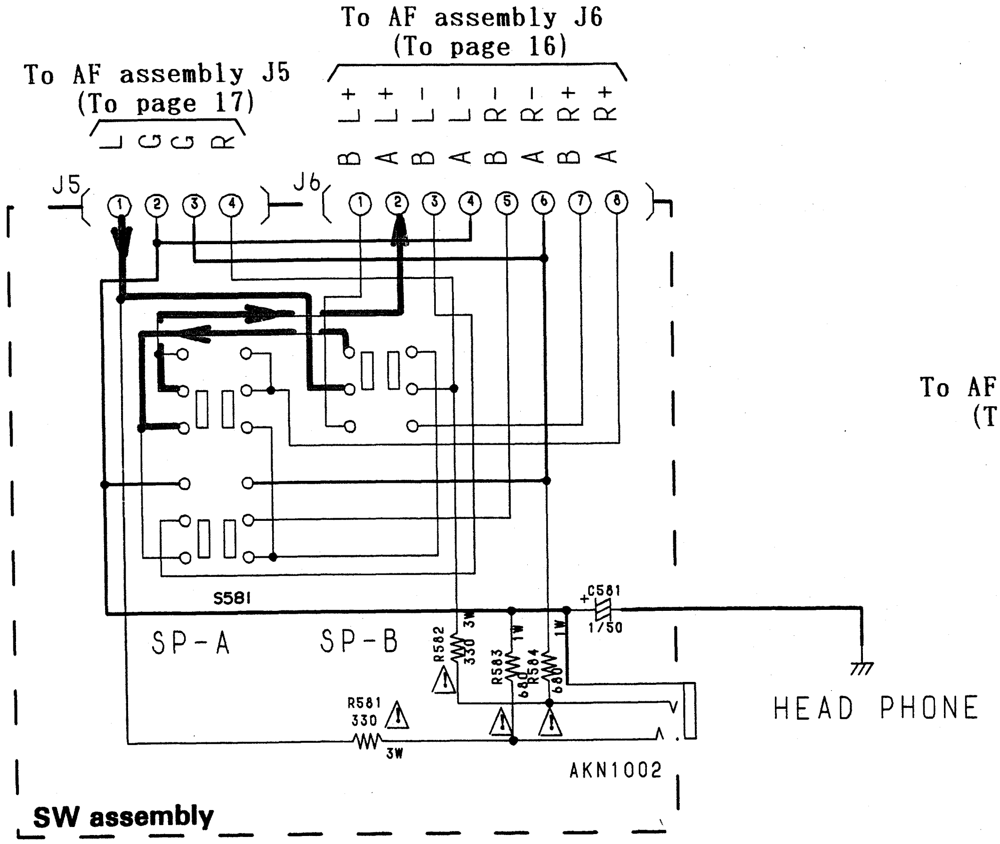
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
E Q504	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

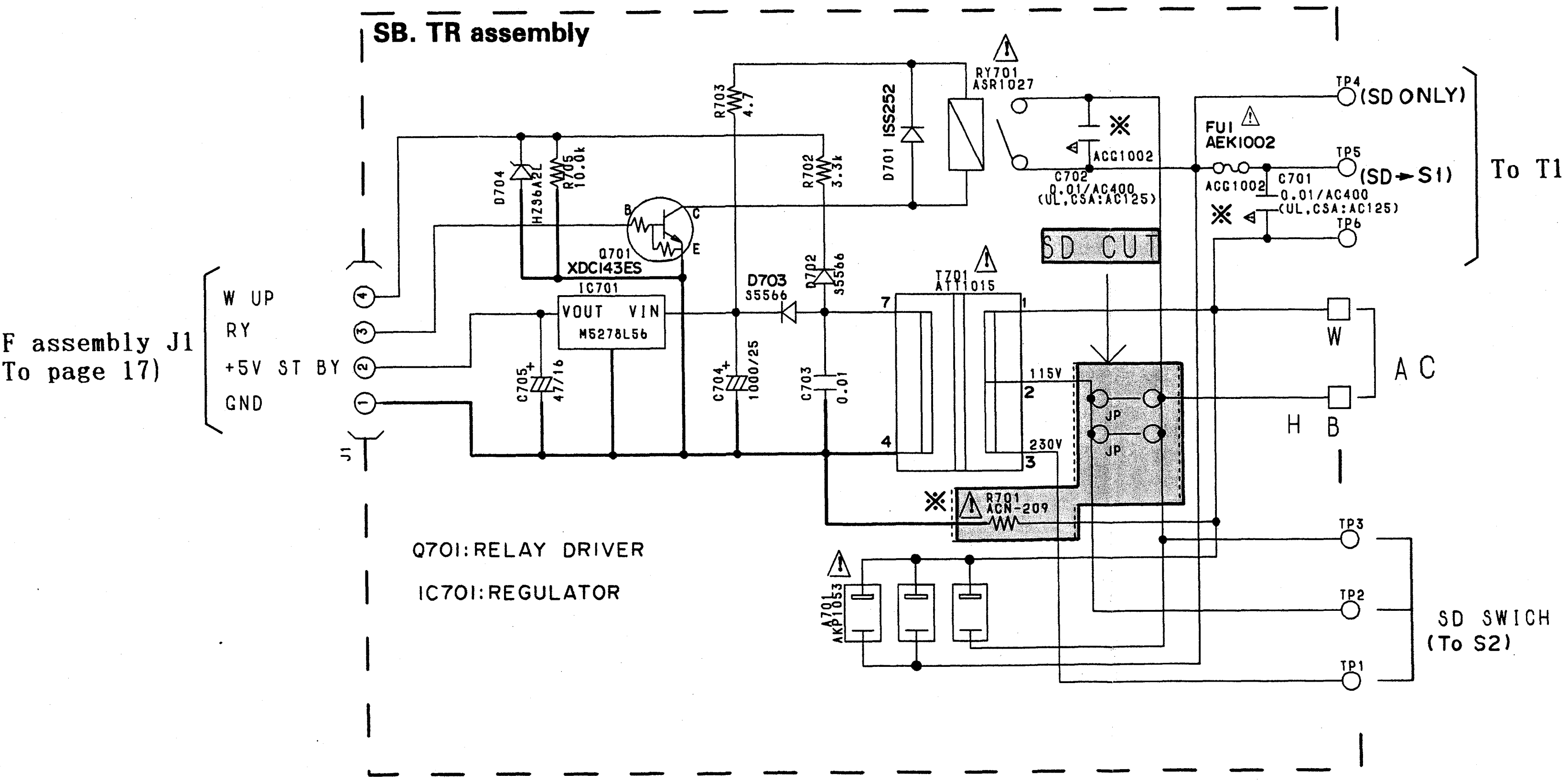
Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.


TRANS assembly
To AF assembly J3
(To page 17)
AC
AC FL
+BV
-BV
GND
AC FL
J3
D751
S5566
D752
S5566
D753
4D4B44
C751
※
0.01
/AC250
ACG1005
FU3
AEK-125
4A/125V
FU4
AEK-125
4A/125V
18 AC FL
17 AC SUB
16 GND
15 AC SUB
To AF assembly J2
(To page 17)
AC MAIN
GND
AC MAIN
J2
13 AC MAIN
11 GND
9 AC MAIN
8 AC FL
To T1


To AF assembly J5
(To page 17)
L
G
G
R
To AF assembly J6
(To page 16)
B L+
A L+
B L-
A L-
B R-
A R-
B R+
A R+
J5
J6
S581
SP-A
SP-B
R582
330 3W
R583
680 1W
R584
680 1W
C581
1/50
R581
330
3W
AKN1002
HEAD PHONE
SW assembly


To AF assembly J1
(To page 17)
W UP
RY
+5V ST BY
GND
J1
SB. TR assembly
R703
4.7
D701 ISS252
RY701
ASR1027
D704
HZS6A2L
R705
10.0k
R702
3.3k
Q701
XDC143ES
B
C
E
IC701
VOUT VIN
M5278L56
C705
47/16
D703
S5566
D702
S5566
C704
1000/25
C703
0.01
T701
ATT1015
7
4
1
2
3
115V
230V
JP
JP
SD CUT
※
R701
ACN-209
※
ACG1002
C702
0.01/AC400
(UL,CSA:AC125)
FU1
AEK1002
ACG1002
C701
0.01/AC400
(UL,CSA:AC125)
※
TP4 (SD ONLY)
TP5 (SD→S1)
TP6
To T1
W
H
B
AC
A701
AKP1053
TP3
TP2
TP1
SD SWICH
(To S2)
Q701:RELAY DRIVER
IC701:REGULATOR

5. PCB's PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56×10^1 561........................RD1/4PS $\boxed{5}\,\boxed{6}\,\boxed{1}$ J
47kΩ 47×10^3 473........................RD1/4PS $\boxed{4}\,\boxed{7}\,\boxed{3}$ J
0.5Ω 0R5..RN2H $\boxed{0}\,\boxed{R}\,\boxed{5}$ K
1Ω 010..RS1P $\boxed{0}\,\boxed{1}\,\boxed{0}$ K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562×10^1 5621......................RN1/4SR $\boxed{5}\,\boxed{6}\,\boxed{2}\,\boxed{1}$ F

◉ TUNER ASSEMBLY (AWE1140)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC431	AM/FM IC	LA1265S
	IC451	MPX IC	AN7470P
	IC471	PLL IC	LM7001
	Q401	MOS−FET	2SK241
	Q402	TRANSISTOR	2SC2786
	Q403	TRANSISTOR	2SC2668
	Q405	N−FET	2SK161
	Q421	TRANSISTOR	2SC2668
	Q451	TRANSISTOR	2SC2603
	Q452, 453	TRANSISTOR	2SC1740S
	Q454	TRANSISTOR	2SA933S
	Q471	N−FET	2SK246
	Q472	TRANSISTOR	2SC1740SLN
	Q473, 474	TRANSISTOR	RN2201
	D401−403	VARI−CAP DIODE	1SV147
	D431−435	DIODE	1SS252

COILS & TRANSFORMER

Mark	No.	Description	Parts No.
	F421	CERAMIC FILTER	ATF−107
	F422	CERAMIC FILTER	ATF−119
	F431	CERAMIC FILTER	ATF−208
	L401	COIL	ATC1001
	L402	COIL	ATC1002
	L403	COIL	ATC1004
	L404	COIL	ATC1005
	L405	COIL	ATC1003
	L406, 407	AXIAL INDUCTOR	LAU2R2M
	L431	COIL	ATE−079
	T402	IF TRANSFORMER	ATE−063

CAPACITORS

Mark	No.	Description	Parts No.
	C400	CERAMIC CAPACITOR	CKDYF102Z50
	C401	CERAMIC CAPACITOR	CCDRH330J50
	C402	CERAMIC CAPACITOR	CCDRH390J50
	C403	CAPACITOR (0.01μF)	ACG1021
	C404, 405	CERAMIC CAPACITOR	CCDRH330J50
	C406	CERAMIC CAPACITOR	CCDCH020C50
	C409	CAPACITOR (100p)	ACG1017
	C410−412	CAPACITOR (0.01μF)	ACG1021
	C413	CERAMIC CAPACITOR	CCDCH150J50
	C414	CERAMIC CAPACITOR	CCDCH330J50
	C415	CERAMIC CAPACITOR	CCDCH080D50
	C416	CERAMIC CAPACITOR	CCDTH180J50
	C417	CERAMIC CAPACITOR	CCDCH010C50
	C418, 419	CAPACITOR (0.01μF)	ACG1021
	C420	ELECTR.CAPACITOR	CEAS100M50
	C421, 422	CAPACITOR (0.01μF)	ACG1021
	C433	ELECTR.CAPACITOR	CEAS4R7M50
	C435	CERAMIC CAPACITOR	CKCYF472Z50
	C436	CERAMIC CAPACITOR	CKCYX683M25
	C437	ELECTR.CAPACITOR	CEAS100M50
	C438	ELECTR.CAPACITOR	CEAS2R2M50
	C439, 440	CERAMIC CAPACITOR	CKCYF223Z50
	C441	CAPACITOR (0.022μF)	ACG1022
	C442	ELECTR.CAPACITOR	CEAS0R1M50
	C443	ELECTR.CAPACITOR	CEAS3R3M50
	C444	CAPACITOR (330p)	ACG1018
	C445	CAPACITOR (47p)	ACG1016
	C446, 447	MYLOR FILM CAPACITOR	CQMA561K50
	C451	ELECTR.CAPACITOR	CEAS101M16
	C452	ELECTR.CAPACITOR	CEANP4R7M35
	C453	CERAMIC CAPACITOR	CKCYF473Z50
	C454	CAPACITOR (470p)	ACE1039
	C455	ELECTR.CAPACITOR	CEAS3R3M50
	C456	ELECTROLYTIC CAPACIT	CEAS1R5M50
	C457	ELECTR.CAPACITOR	CEASR22M50
	C458	ELECTR.CAPACITOR	CEAS470M16
	C459, 460	MYLOR FILM CAPACITOR	CQMA102J50
	C461, 462	ELECTR.CAPACITOR	CEAS4R7M50
	C463, 464	ELECTR.CAPACITOR	CEAS470M16
	C465	CAPACITOR (0.01μF)	ACG1021
	C466	CERAMIC CAPACITOR	CCCSL121J50
	C468, 469	MYLOR FILM CAPACITOR	CQMA182J50
	C471	CAPACITOR (0.01μF)	ACG1021
	C472	CAPACITOR (0.022μF)	ACG1022
	C473	CAPACITOR (0.01μF)	ACG1021
	C475	ELECTR.CAPACITOR	CEAS100M50
	C476	CAPACITOR (0.01μF)	ACG1021
	C477	CERAMIC CAPACITOR	CKCYF103Z50
	C478	AUDIO FILM CAPACITOR	CFTXA224J50
	C479	CAPACITOR (22p)	ACG1025
	C480	CAPACITOR (0.01μF)	ACG1021
	C481, 482	CAPACITOR	CCDCH150J50
	C483	CAPACITOR (100p)	ACG1017
	C484	ELECTR.CAPACITOR	CEAS470M16
	C485	CAPACITOR (0.01μF)	ACG1021

RESISTORS

Mark	No.	Description	Parts No.
	VR431	VR (10K)	ACP1025
	VR432	VR	VRTS6VS153
	VR451	VR (4.7K)	ACP1024
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
		ANTENNA TERMINAL 4−P	AKA1014
		AM RF TUNING BLOCK	AXX1011
	X431	CERAMIC FILTER	ATF−125
	X471	CRYSTAL RESONATOR	ASS1005

TRANS ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	D751, 752	DIODE	S5566
	D753	DIODE	4D4B44

CAPACITOR

Mark	No.	Description	Parts No.
	C751	CKA (0.01/AC250V)	ACG1005

SB. TR ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC701	REGULATOR IC	M5278L56 (A)
	Q701	TRANSISTOR	XDC143ES
	D701	DIODE	1SS252
	D702, 703	DIODE	S5566
	D704	ZENER DIODE	HZS6A2L

RELAY

Mark	No.	Description	Parts No.
⚠	RY701	RELAY	ASR1027

TRANSFORMER

Mark	No.	Description	Parts No.
⚠	T701	POWER TRANSFORMER	ATT1015

CAPACITORS

Mark	No.	Description	Parts No.
⚠	C701, 702	CKA (0.01/AC400V)	ACG1002
	C703	CERAMIC CAPACITOR	CKDYF103Z50
	C704	ELECTR.CAPACITOR	CEAS102M25
	C705	ELECTR.CAPACITOR	CEAS470M16

RESISTORS

Mark	No.	Description	Parts No.
⚠	R701	RESISTOR (2.2M, 1/2W)	ACN−209
	R702	CARBON FILM RESISTOR	RD1/4PM332J
	R703	CARBON FILM RESISTOR	RD1/4PM4R7J
	R705	CARBONFILM RESISTOR	RD1/8PM103J

OTHERS

Mark	No.	Description	Parts No.
⚠		AC OUTLET (3P)	AKP1053

SW ASSEMBLY

SWITCH

Mark	No.	Description	Parts No.
	S581	PUSH SWITCH	SUJ5LXYS

CAPACITORS

Mark	No.	Description	Parts No.
	C581	ELECTR.CAPACITOR	CEAS010M50

RESISTORS

Mark	No.	Description	Parts No.
⚠	R581, 582	METAL OXIDE RESISTOR	RS3LMF331J
⚠	R583, 584	METAL OXIDE RESISTOR	RS1PMF681J

OTHERS

Mark	No.	Description	Parts No.
		JACK	AKN1002

⊙ VR ASSEMBLY (AWZ3599)

SEMICONDUCTORS

Mark No.	Description	Parts No.
IC201	MECHANISM DRIVER IC	TA7291S
IC202	OP−AMP−IC	M5220P
Q201	TRANSISTOR	XDC124ES
D201	DIODE	1SS252

COILS

Mark No.	Description	Parts No.
L201, 202	AXIAL INDUCTOR	LAU220K
L203, 204	AXIAL INDUCTOR	LAU221K

CAPACITORS

Mark No.	Description	Parts No.
C201	ELECTR.CAPACITOR	CEAS470M16
C202, 203	CERAMIC CAPACITOR	CKDYF473Z50
C205, 206	ELECTR.CAPACITOR	CEAS4R7M50
C207, 208	CERAMIC CAPACITOR	CKCYB331K50
C209, 210	ELECTR.CAPACITOR	CEAS4R7M50
C211, 212	CERAMIC CAPACITOR	CKDYF103Z50

RESISTORS

Mark No.	Description	Parts No.
VR201	VARIABLE RESISTOR with LED and Motor (50k)	ACX1055
VR202	VARIABLE RESISTOR (250k)	ACS1070
	Other resistors	RD1/8PM□□□J

OTHERS

Mark No.	Description	Parts No.
CN13	CONNECTOR (3P)	KPE3

⊙ AF ASSEMBLY (AWZ3605)

SEMICONDUCTORS

Mark No.	Description	Parts No.
IC101	E−SW IC	TC9164N
IC102	E−SW IC	TC9163N
IC103	E−VR IC	TC9154AP
IC104	E−TONE CONTROL IC	TC9184P
IC105	OP−AMP−IC	M5220P
IC106, 107	OP−AMP IC	RC4558DXP
IC108	OP−AMP−IC	M5220P
IC109	OP−AMP IC	RC4558DXP
IC301	REGULATOR IC	NJM7812FA
IC302	REGULATOR IC	NJM79M12FA
IC303	REGULATOR IC	NJM7812FA
IC304	REGULATOR IC	M5278L56 (A)
Q301	TRANSISTOR	XDC124ES
Q302	TRANSISTOR	XDC143ES
Q303	TRANSISTOR	2SA1048
Q351, 352	TRANSISTOR	2SC2240
Q353, 354	TRANSISTOR	2SC2458
Q355	TRANSISTOR	2SA1145
Q356, 357	TRANSISTOR	2SC2458
Q501−504	TRANSISTOR	2SA992
Q513, 514	TRANSISTOR	2SC1845
Q521, 522	TRANSISTOR	2SA1145
Q523, 524	TRANSISTOR	2SC2705
Q541, 542	TRANSISTOR	2SC2603
Q551, 552	TRANSISTOR	2SC3298
Q553, 554	TRANSISTOR	2SA1306
D101, 102	DIODE	1SS252
D301	DIODE	D5SB20F
D306	ZENER DIODE	HZS6B2L
D307	ZENER DIODE	HZS5ALL
D308	DIODE	1SS252
D310−313	DIODE	1SS252
D314	ZENER DIODE	RD33ESB
D315	ZENER DIODE	RD10ESB
D316	DIODE	1SS252
D317	DIODE	1SS252
D351−354	DIODE	1SS252
D355	ZENER DIODE	HZS12AL
D356−359	DIODE	1SS252
D513, 514	DIODE	1SS252
D521−524	DIODE	1SS252
D559, 560	DIODE	1SS252

RELAY

Mark No.	Description	Parts No.
RY351	RELAY	ASR−112

COILS

Mark No.	Description	Parts No.
L351, 352	COIL	ATH1004

CAPACITORS

Mark No.	Description	Parts No.
C101	ELECTR.CAPACITOR	CEAS2R2M50
C102−105	CERAMIC CAPACITOR	CKDYF103Z50
C141, 142	CERAMIC CAPACITOR	CKDYB102K50
C143	CERAMIC CAPACITOR	CKDYB471K50
C144	CERAMIC CAPACITOR	CKDYB102K50
C147, 148	ELECTR.CAPACITOR	CEAS470M16
C151, 152	ELECTR.CAPACITOR	CEAS2R2M50
C153−156	ELECTR.CAPACITOR	CEAS4R7M50
C157, 158	CERAMIC CAPACITOR	CCCSL680J50
C159, 160	ELECTR.CAPACITOR	CEAS4R7M50
C171, 172	ELECTR.CAPACITOR	CEAS2R2M50
C173, 174	CERAMIC CAPACITOR	CCDSL121J50
C175, 176	ELECTR.CAPACITOR	CEAS010M50
C177, 178	MYLOR FILM CAPACITOR	CQMA823J50
C179, 180	MYLOR FILM CAPACITOR	CQMA153J50
C181, 182	ELECTR.CAPACITOR	CEAS100M25
C183, 184	MYLOR FILM CAPACITOR	CQMA272J50
C185, 186	MYLOR FILM CAPACITOR	CQMA153J50
C187, 188	ELECTR.CAPACITOR	CEAS4R7M50
C189	ELECTR.CAPACITOR	CEAS470M16

Mark	No.	Description	Parts No.
	C191	CERAMIC CAPACITOR	CKDYB471K50
	C192, 193	CERAMIC CAPACITOR	CKDYB102K50
	C194−197	CERAMIC CAPACITOR	CKDYF103Z50
	C301, 302	CAPACITOR (8200/71)	ACH1204
	C303	CEA (4700/42V)	ACH1203
	C304	CEA (3300/42V)	ACH1123
	C305, 306	CERAMIC CAPACITOR	CKDYF103Z50
	C307, 308	ELECTR.CAPACITOR	CEAS101M35
	C309, 310	ELECTR.CAPACITOR	CEAS470M16
	C311	CEA (47000/5.5V)	ACH1037
	C313	ELECTR.CAPACITOR	CEAS470M50
	C314	CERAMIC CAPACITOR	CKDYF103Z50
	C315	ELECTR.CAPACITOR	CEAS101M35
	C316	CKA (0.01/AC250V)	ACG1005
	C317	CERAMIC CAPACITOR	CKDYF103Z50
	C318	ELECTR.CAPACITOR	CEAS470M10
	C351, 352	ELECTROLYTIC CAPACIT	CEANP2R2M100
	C353	ELECTR.CAPACITOR	CEAS471M16
	C354	CERAMIC CAPACITOR	CKDYF103Z50
	C355	ELECTR.CAPACITOR	CEAS221M16
	C357, 358	AUDIO FILM CAPACITOR	CFTXA473J50
	C501, 502	ELECTR.CAPACITOR	CEAS4R7M50
	C503, 504	MYLOR FILM CAPACITOR	CQMA122J50
	C505, 506	CERAMIC CAPACITOR	CKDYB681K50
	C507−509	CERAMIC CAPACITOR	CCCSL470J50
	C51	ELECTR.CAPACITOR	CEAS100M50
	C510	CERAMIC CAPACITOR	CCCSL470J50
	C52	ELECTR.CAPACITOR	CEAS100M50
	C520	ELECTR.CAPACITOR	CEAS101M25
	C521, 522	ELECTR.CAPACITOR	CEAS220M25
	C523, 524	CERAMIC CAPACITOR	CCCSL040C500
	C525, 526	CERAMIC CAPACITOR	CCCSL080D500
	C53	ELECTR.CAPACITOR	CEAS470M16
	C531, 532	ELECTR.CAPACITOR	CEAS101M10
	C54	ELECTR.CAPACITOR	CEAS470M16
	C541, 542	CERAMIC CAPACITOR	CKDYB102K50
	C55	MYLOR FILM CAPACITOR	CQMA822J50
	C551−554	CERAMIC CAPACITOR	CCCSL221K500
	C56	MYLOR FILM CAPACITOR	CQMA822J50
	C57, 58	MYLOR FILM CAPACITOR	CQMA242J50
	C59, 60	ELECTR.CAPACITOR	CEAS2R2M50
	C61, 62	CERAMIC CAPACITOR	CKDYF103Z50
	C63, 64	CERAMIC CAPACITOR	CCDSL221J50

Mark	No.	Description	Parts No.
RESISTORS			
	R300, 301	METAL OXIDE RESISTOR	RS2LMF330J
	R302	CARBON FILM RESISTOR	RD1/4PMFL4R7J
	R303	METAL OXIDE RESISTOR	RS1LMF101J
	R304	CARBON FILM RESISTOR	RD1/4PMF331J
	R306	METAL OXIDE RESISTOR	RS2LMF332J
	R307	METAL OXIDE RESISTOR	RS2LMF392J
	R319	METAL OXIDE RESISTOR	RS2LMF220J
	R351, 352	CARBON FILM RESISTOR	RD1/4PMF100J
	R353, 354	METAL OXIDE RESISTOR	RS1PMF100J
	R355, 356	CARBON FILM RESISTOR	RD1/4PMF222J
	R359, 366	CARBON FILM RESISTOR	RD1/4PMF101J
	R368, 369	CARBON FILM RESISTOR	RD1/4PMF222J
⚠	R513−516	FUSIBLE RESISTOR	RFA1/4PS391J
	R521, 522	CARBON FILM RESISTER	RD1/4PM152J
	R523, 524	CARBON FILM RESISTOR	RD1/4PM473J
	R525, 526	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
	R531, 532	CARBON FILM RESISTOR	RD1/4PM471J
⚠	R535, 536	FUSIBLE RESISTOR	RFA1/4PS470J
⚠	R551−554	CARBON FILM RESISTOR	RD1/4PMF470J
	R555−558	CARBON FILM RESISTOR	RD1/4PMFL101J
	R561, 562	RESISTOR (0.33, 5W)	ACN1087
⚠	R567−570	FUSIBLE RESISTOR	RFA1/4PS4R7J
⚠	R575−578	CARBON FILM RESISTOR	RD1/4PMF4R7J
		Other resistors	RD1/8PM□□□J
OTHERS			
		PIN JACK (4P)	AKB1101
		PIN JACK (6P)	AKB1121
		PIN JACK (6P)	AKB1129
		SPEAKER TERMINAL 8−P	AKE−111
		JACK	AKN1006
		JACK	AKN1020
	CN8, 10	CONNECTOR (10P)	KPE10

⊙ C/S AMP ASSEMBLY (AWZ3604)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC801	PREDRIVER-IC	UPC1270H
	Q801	TRANSISTOR	2SA992
	Q802-805	TRANSISTOR	2SC2458
	Q806	TRANSISTOR	2SC2240
	Q817	TRANSISTOR	2SA992
	D801-804	DIODE	1SS252
	D809	DIODE	1SS252
	D810	ZENER DIODE	RD10ESB
	D811	ZENER DIODE	RD4.3ESB2
	D898, 899	DIODE	1SS252

CAPACITORS

Mark	No.	Description	Parts No.
	C800	CERAMIC CAPACITOR	CKDYB222K50
	C801	ELECTR.CAPACITOR	CEAS2R2M50
	C802	ELECTR.CAPACITOR	CEAS470M16
	C803	CERAMIC CAPACITOR	CCCSL330J50
	C804	ELECTROLYTIC CAPACIT	CEHAQ470M25
	C805	CERAMIC CAPACITOR	CCCSL101J50
	C806	ELECTR.CAPACITOR	CEANP2R2M50
	C808	ELECTR.CAPACITOR	CEAS2R2M50
	C809	CERAMIC CAPACITOR	CKDYB222K50
	C810	ELECTROLYTIC CAPACIT	CEHAQ101M10
	C811	CERAMIC CAPACITOR	CCCSL680J50
	C812	MYLOR FILM CAPACITOR	CQMA333J50
	C815	ELECTR.CAPACITOR	CEANP2R2M50
	C819	ELECTR.CAPACITOR	CEAS220M50
	C820	CERAMIC CAPACITOR	CKDYB102K50
	C821	ELECTROLYTIC CAPACIT	CEAS100M100
	C822, 823	CERAMIC CAPACITOR	CKDYF103Z50

RESISTORS

Mark	No.	Description	Parts No.
	R809	CARBON FILM RESISTOR	RD1/4PMF470J
	R814, 815	METAL OXIDE RESISTOR	RS2LMFR47J
	R829	RESISTOR (0.22, 2W)	ACN-131
		Other resistors	RD1/8PM☐☐☐J

⊙ SUR ASSEMBLY (AWZ3606)

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC901	OP-AMP IC	RC4558DXP
	IC902	LOGIC IC	XRU4066B
	IC903	DOLBY SURROUND IC	LV1000N
	IC904	DRAM IC	LM3364K-15
	IC905	NOISE SEQUENCER IC	LA2775
	IC906	DOLBY PRO-LOGIC IC	LA2770
	IC907	PORT-EXPANDER IC	CXD1067P
	IC908	OP-AMP IC	NJM4558S-X
	IC910, 911	OP-AMP IC	RC4558DXP
	IC912	E-VR IC	TC9176P
	IC914	OP-AMP IC	NJM4558S-X
	Q901	TRANSISTOR	2SC2458
	Q902	TRANSISTOR	2SA1048
	Q903-906	TRANSISTOR	XDC124ES
	Q907	TRANSISTOR	XDA124ES
	Q908	TRANSISTOR	XDC124ES
	Q909	N-FET	2SK369
	Q910	TRANSISTOR	XDC124ES
	Q911	TRANSISTOR	XDA124ES
	Q912	TRANSISTOR	XDC124ES
	Q913	TRANSISTOR	2SC2878
	Q914	TRANSISTOR	XDA124ES
	Q917	TRANSISTOR	2SD880
	Q918	TRANSISTOR	XDA124ES
	D901	ZENER DIODE	RD5.6ESB
	D902-905	DIODE	1SS252

CAPACITORS

Mark	No.	Description	Parts No.
	C1000	CERAMIC CAPACITOR	CCDSL470J50
	C1001, 1002	ELECTR.CAPACITOR	CEAS4R7M50
	C1005, 1006	ELECTR.CAPACITOR	CEAS2R2M50
	C1007	MYLOR FILM CAPACITOR	CQMA822K50
	C1008	CERAMIC CAPACITOR	CKDYX104M16
	C1107	CERAMIC CAPACITOR	CKDYF103Z50
	C1108, 1109	ELECTR.CAPACITOR	CEAS101M25
	C1110	CERAMIC CAPACITOR	CKDYX104M16
	C901-903	ELECTR.CAPACITOR	CEAS4R7M50
	C904	ELECTR.CAPACITOR	CEAS0R1M50
	C905	ELECTR.CAPACITOR	CEAS100M50
	C906	AUDIO FILM CAPACITOR	CFTXA154J50
	C907	CERAMIC CAPACITOR	CCDSL151J50
	C908	AUDIO FILM CAPACITOR	CFTXA223J50
	C909	CERAMIC CAPACITOR	CKDYB102K50
	C910	ELECTR.CAPACITOR	CEAS4R7M50
	C911	ELECTR.CAPACITOR	CEAS471M16
	C912	ELECTR.CAPACITOR	CEAS4R7M50
	C913	CERAMIC CAPACITOR	CKDYB102K50
	C914	AUDIO FILM CAPACITOR	CFTXA223J50
	C915	CERAMIC CAPACITOR	CCDSL151J50
	C916-918	ELECTR.CAPACITOR	CEAS221M25
	C921	ELECTR.CAPACITOR	CEASR22M50
	C922	AUDIO FILM CAPACITOR	CFTXA683J50
	C923	MYLOR FILM CAPACITOR	CQMA392J50

Mark No.	Description	Parts No.
C924	MYLOR FILM CAPACITOR	CQMA472J50
C925	AUDIO FILM CAPACITOR	CFTXA333J50
C926	ELECTROLYTIC CAPACIT	CEANP100M25
C927	ELECTR.CAPACITOR	CEAS010M50
C929	CERAMIC CAPACITOR	CKDYB471K50
C930	MYLOR FILM CAPACITOR	CQMA562J50
C931	MYLOR FILM CAPACITOR	CQMA682J50
C932, 933	ELECTR.CAPACITOR	CEAS100M50
C935	CERAMIC CAPACITOR	CKDYB681K50
C936	ELECTR.CAPACITOR	CEAS100M50
C937	ELECTROLYTIC CAPACIT	CEANPR33M50
C938	CERAMIC CAPACITOR	CKDYF103Z50
C939	ELECTR.CAPACITOR	CEAS221M25
C940−942	ELECTR.CAPACITOR	CEAS4R7M50
C943, 944	ELECTR.CAPACITOR	CEAS101M25
C945−947	AUDIO FILM CAPACITOR	CFTXA103J50
C948	CERAMIC CAPACITOR	CKDYF222Z50
C949	ELECTR.CAPACITOR	CEAS100M25
C950, 951	AUDIO FILM CAPACITOR	CFTXA104J50
C952, 953	AUDIO FILM CAPACITOR	CFTXA154J50
C954	MYLOR FILM CAPACITOR	CQMA681K50
C955, 956	ELECTROLYTIC CAPACIT	CEYA4R7M50
C957	MYLOR FILM CAPACITOR	CQMA682K50
C958	ELECTR.CAPACITOR	CEAS470M10
C959	AUDIO FILM CAPACITOR	CFTXA224J50
C960	ELECTROLYTIC CAPACIT	CEYA4R7M50
C961	AUDIO FILM CAPACITOR	CFTXA224J50
C962−965	ELECTR.CAPACITOR	CEAS4R7M50
C966	ELECTR.CAPACITOR	CEAS221M10
C967	AUDIO FILM CAPACITOR	CFTXA224J50
C968	ELECTROLYTIC CAPACIT	CEYA4R7M50
C969	AUDIO FILM CAPACITOR	CFTXA224J50
C970	MYLOR FILM CAPACITOR	CQMA682K50
C971	ELECTR.CAPACITOR	CEAS101M16
C972, 973	ELECTROLYTIC CAPACIT	CEYA4R7M50
C974	AUDIO FILM CAPADITOR	CFTXA334J50
C975	MYLOR FILM CAPACITOR	CQMA681K50
C976	AUDIO FILM CAPADITOR	CFTXA334J50
C977, 978	AUDIO FILM CAPACITOR	CFTXA104J50
C979	ELECTR.CAPACITOR	CEAS100M25
C980	ELECTR.CAPACITOR	CEAS100M50
C981	CERAMIC CAPACITOR	CKCYB102K50
C983	MYLOR FILM CAPACITOR	CQMA472J50
C984	ELECTR.CAPACITOR	CEAS220M16
C985	AUDIO FILM CAPADITOR	CFTXA334J50
C986	AUDIO FILM CAPACITOR	CFTXA103J50
C987	AUDIO FILM CAPACITOR	CFTXA104J50
C989	AUDIO FILM CAPACITOR	CFTXA473J50
C990	ELECTR.CAPACITOR	CEAS100M50
C991, 992	ELECTR.CAPACITOR	CEAS4R7M50
C993, 994	CERAMIC CAPACITOR	CCDSL470J50
C995−998	ELECTR.CAPACITOR	CEAS4R7M50
C999	CERAMIC CAPACITOR	CCDSL470J50

RESISTORS

VR901	VR	VRTB6VS105
	Other resistors	RD1/8PM□□□J

OTHERS

CN12	CONNECTOR (11P)	KPE11
CN14	CONNECTOR (8P)	KPE8
CN7	CONNECTOR (9P)	KPE9
CN9	CONNECTOR (6P)	KPE6
X901	CRYSTAL RESONATOR	ASS1015

⊙ FL ASSEMBLY (AWZ3607)

SEMICONDUCTORS

IC1001	SYSTEM CONTROL MCU	PDG069A
Q1001	TRANSISTOR	XDA143ES
Q1002, 1003	TRANSISTOR	2SC2458
Q1005−1016	TRANSISTOR	XDC124ES
D1001	DIODE	1SS252
D1002	LED (RED)	AEL1108
D1005−1016	DIODE	1SS252

Mark No.	Description	Parts No.
SWITCHES		
S1001	SWITCH	ASG1029
S1003–1047	SWITCH	ASG1029
S1050	SWITCH	ASG1029
COIL		
L1001	AXIAL INDUCTOR	LAU100K
CAPACITORS		
C1101	ELECTR.CAPACITOR	CEAS0R1M50
C1102–1104	ELECTR.CAPACITOR	CEAS100M50
C1105	ELECTROLYTIC CAPACIT	CEAS470M35
C1106	ELECTR.CAPACITOR	CEAS100M25
RESISTORS		
	All resistors	RD1/8PM□□□J
OTHERS		
	REMOTE RECEIVER UNIT	AXX1010
V1001	FL TUBE	AAV1122
X1001	CERAMIC OSCILLATOR	ASS1022

⊙ V/SP ASSEMBLY (AWZ3608)

SEMICONDUCTORS		
IC851	E–SW IC	CX–894
Q808	TRANSISTOR	XDC143ES
Q851–853	TRANSISTOR	2SC2458
Q854	TRANSISTOR	2SA1048
Q855–857	TRANSISTOR	2SC2458
Q858	TRANSISTOR	2SA1048
Q859, 861	TRANSISTOR	2SC2458
Q862	TRANSISTOR	2SA1048
D806, 808	DIODE	1SS252
D851, 852	DIODE	1SS252
D854	ZENER DIODE	RD9.1ESB
RELAY		
RY801	RELAY	ASR1035
COILS		
L801, 802	COIL	ATH1004
CAPACITORS		
C807, C816	CERAMIC CAPACITOR	CKDYF473Z50
C851	CERAMIC CAPACITOR	CCMSL080D50
C852	ELECTR.CAPACITOR	CEAS101M16
C853	CERAMIC CAPACITOR	CCMSL080D50
C854	ELECTR.CAPACITOR	CEAS4R7M50

Mark No.	Description	Parts No.
C856	CERAMIC CAPACITOR	CCMSL080D50
C857	ELECTR.CAPACITOR	CEAS470M10
C861	CERAMIC CAPACITOR	CKDYF103Z50
C867	ELECTR.CAPACITOR	CEAS470M16
C869, 870	ELECTR.CAPACITOR	CEAS470M16
C891–893	ELECTR.CAPACITOR	CEAS4R7M50
C894	ELECTR.CAPACITOR	CEAS010M50
RESISTORS		
R819	CARBON FILM RESISTOR	RDR1/4PM100J
R820	CARBON FILM RESISTOR	RD1/4PMF100J
R835	CARBON FILM RESISTOR	RDR1/4PM100J
R836	CARBON FILM RESISTOR	RD1/4PMF100J
R838	CARBON FILM RESISTOR	RD1/4PMF101J
	Other resistors	RD1/8PM□□□J
OTHERS		
	PIN JACK (2P)	AKB1118
	PHONO JACK 2–P	AKB1134
	SPEAKER TERMINAL 2–P	AKE–058
	SPEAKER TERMINAL 4–P	AKE–109
CN11	CONNECTOR(4P)	KPE4
CN21	CONNECTOR(3P)	KPE3

6. DISASSEMBLY

1. Remove the Bonnet case. (six screws ①)

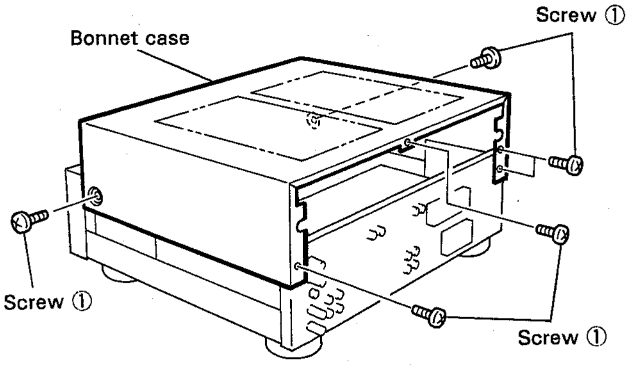

Screw ①
Bonnet case
Screw ①
Screw ①

Fig. 1

2. Disconnect the capacitor between the shield case of TUNER assembly and chassis.
3. Remove the Heat sink mounting screw (two screws ②).
4. Remove the SB TR assembly from PCB holder (of Chassis).

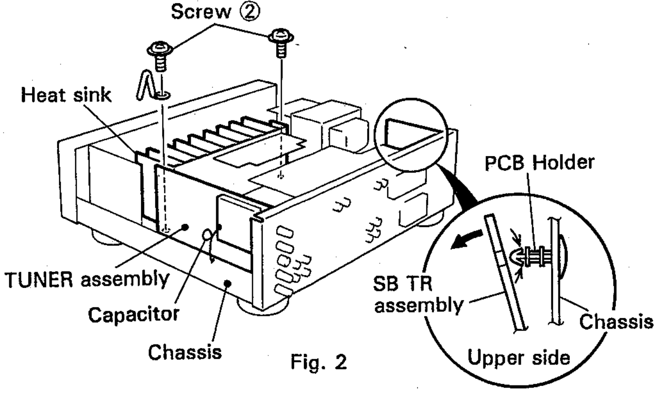

Screw ②
Heat sink
PCB Holder
TUNER assembly
Capacitor
Chassis
SB TR assembly
Chassis
Upper side

Fig. 2

5. Place the main unit in such away that the power transformer is at the bottom.
6. Remove the Insulator assembly of rear side (two screws ③).

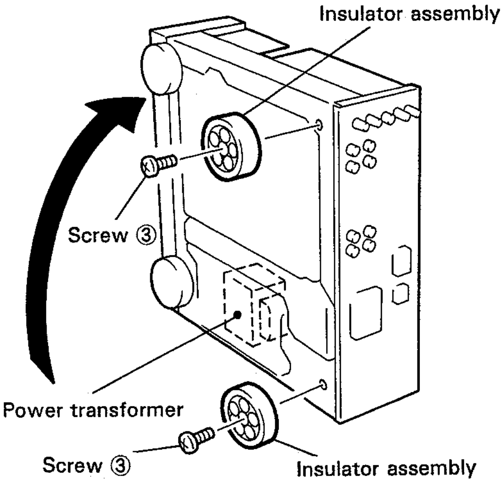
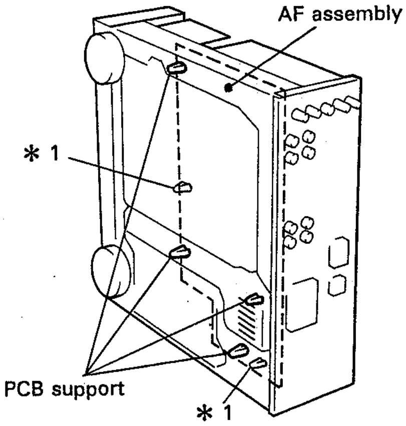

Insulator assembly
Screw ③
Power transformer
Screw ③
Insulator assembly

Fig. 3

7. Remove the PCB support attaching the AF assembly (four positions).


AF assembly
＊1
PCB support
＊1

＊1 : It is not required to remove this PCB support.

Fig. 4

8. Remove the mounting screws on the rear panel (14 screws ④).

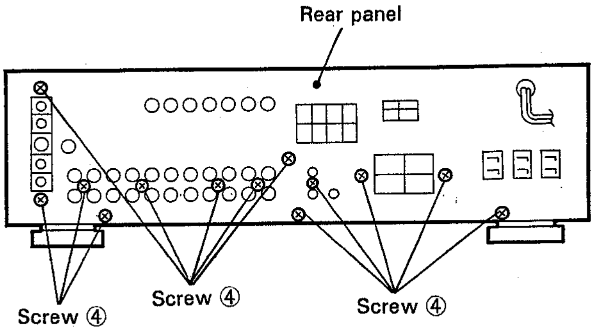

Rear panel
Screw ④
Screw ④
Screw ④

Fig. 5

9. Open the pulling the rear panel until the P.C.boards can be seen.

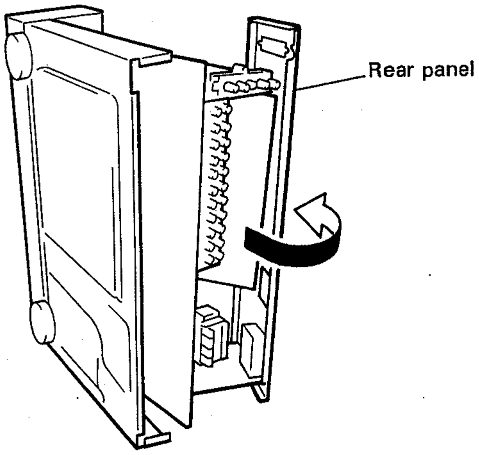


Fig. 6

7. ADJUSTMENT

7.1 TUNER SECTION

1. Wiring …… Connect the wires as shown in Fig. 7−1 (FM ANT. terminal : 75Ω)
2. Preset …… Set the VR451 to center position.

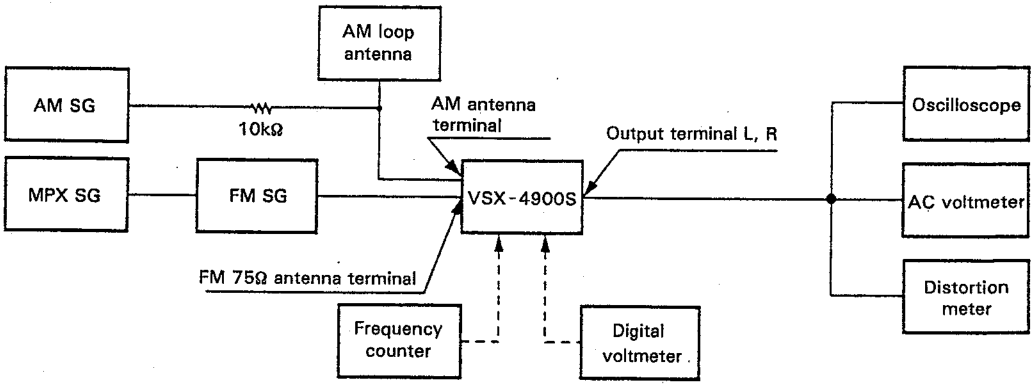

AM loop antenna
AM SG
10kΩ
AM antenna terminal
MPX SG
FM SG
VSX-4900S
Output terminal L, R
FM 75Ω antenna terminal
Frequency counter
Digital voltmeter
Oscilloscope
AC voltmeter
Distortion meter

Fig. 7−1 AM and FM adjustment wiring diagram

Note: Stereo modulation: Main 1kHz L+R ±68.25kHz
Pilet 19 kHz ±6.75kHz

FM Section

Order	Item	SSG			Receiving frequency	Adjustment	
		Frequency	Modulation	Level		Adjustment location	Remarks
1	Checking front end VT	No signal			108MHz	——	Check that the voltage between terminal 41 and ground is 8.7 ±2.0V.
2	Checking front end VT				87.5MHz	——	Check that the voltage between terminal 41 and ground is 3.4±1.5V.
3	Increasing front end sensitivity	98MHz		Weak input	98MHz	L402, L404, T402	Set the voltage between terminal 43 and ground to maximum, and check that the practical sensitivity is as specified.(5dBμV/75Ω or less)
4	Center adjustment	98MHz		60dBμV	98MHz	L431	Adjust the voltage between terminals 45 and 46 to 0±50mV.
5	Checking monophonic distortion	98MHz	1kHz ±75kHz dev.	60dBμV	98MHz	——	Check that the monophonic distortion is as specified. (0.6% or less)
6	Adjusting VCO		OFF	60dBμV		VR451	Adjust the output of terminal 44 to 76.0kHz±1.0kHz.
7	Adjusting stereo distortion	98MHz	L−ONLY R−ONLY	60dBμV	98MHz	T402	Minimize the distortion within 1/4 rotation of the core,and check conformity to the specification.(0.8%)
8	Checking separation	98MHz	L−ONLY R−ONLY	60dBμV	98MHz	——	Check that the separation of L→R and R→L is as specified. *1
9	Checking lighting levels of TUNED and STEREO IND.	98MHz	STEREO	10dBμV $\left(^{+1\text{dB}}_{-2\text{dB}}\right)$	98MHz	VR432	Adjust TUNED and STEREO IND. to start lighting.

*1: More than 30dB

AM Section

Order	Item	SSG			Receiving frequency	Adjustment	
		Frequency	Modulation	Level		Adjustment location	Remarks
1	Checking front end VT	No signal			1700kHz	—	Check that the voltage between terminal 41 and ground is 7.5 ±1.0V.
2	Checking front end VT				530kHz	—	Check that the voltage between terminal 41 and ground is 1.5±0.5V.
3	Checking front end sensitivity	1000kHz	400kHz 30% MOD.	Practical sensitivity level	1000kHz	—	Check that the practical sensitivity (maximum sensitivity) is as specified. *2
4	Adjusting lighting level of TUNED IND.	1000kHz			1000kHz	VR431	Adjust the lighting level of TUNED IND. to 55dBμV/m ±3dB.

*2: 65dBμV/m or less

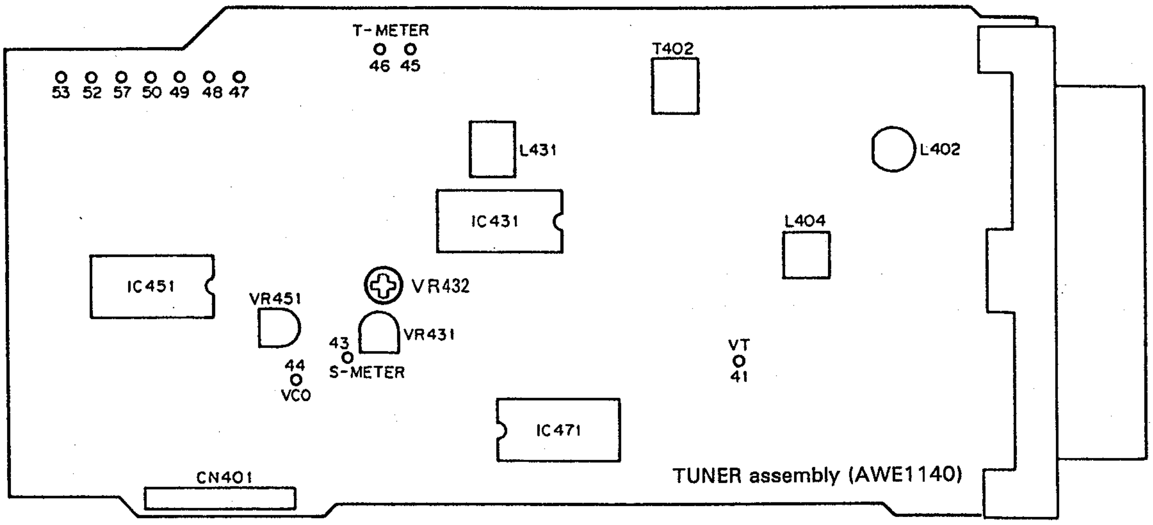

T-METER
46 45
T402
53 52 57 50 49 48 47
L431
L402
IC431
L404
IC451
VR451
VR432
43
VR431
S-METER
44
VCO
VT
41
IC471
CN401
TUNER assembly (AWE1140)

Fig. 7–2 Adjustment location of TUNER SECTION

7.2 SURROUND SECTION

1. Feed 300mV, 1kHz sinusoidal waves to this unit.
2. Set the SIMULATED STEREO mode.
3. Adjust VR901 to minimize the level difference (within −2dB) between R1004 (Pin Ⓐ) and C936 (Negative pin Ⓑ).

SUR assembly

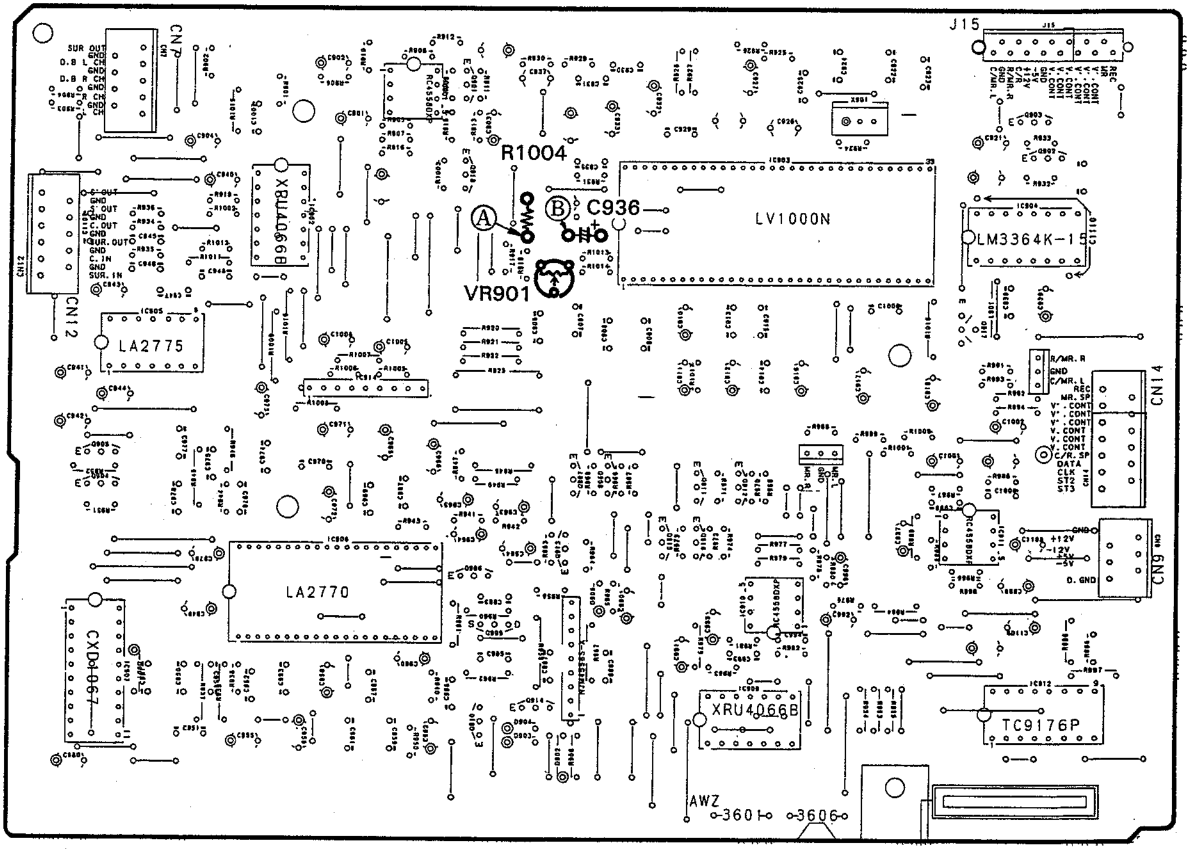

R1004
Ⓐ
Ⓑ
C936
VR901
LV1000N
XBU4066B
LA2775
LA2770
CXD1067
LM3364K-15
TC9176P
XRU4066B
CN12
CN14
CN9
J15
AWZ
-3601
-3606

Fig. 7−3 Adjustment location of SURROND SECTION

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8. IC INFORMATION

■ IC903 (LV1000N) : DOLBY SURROUND

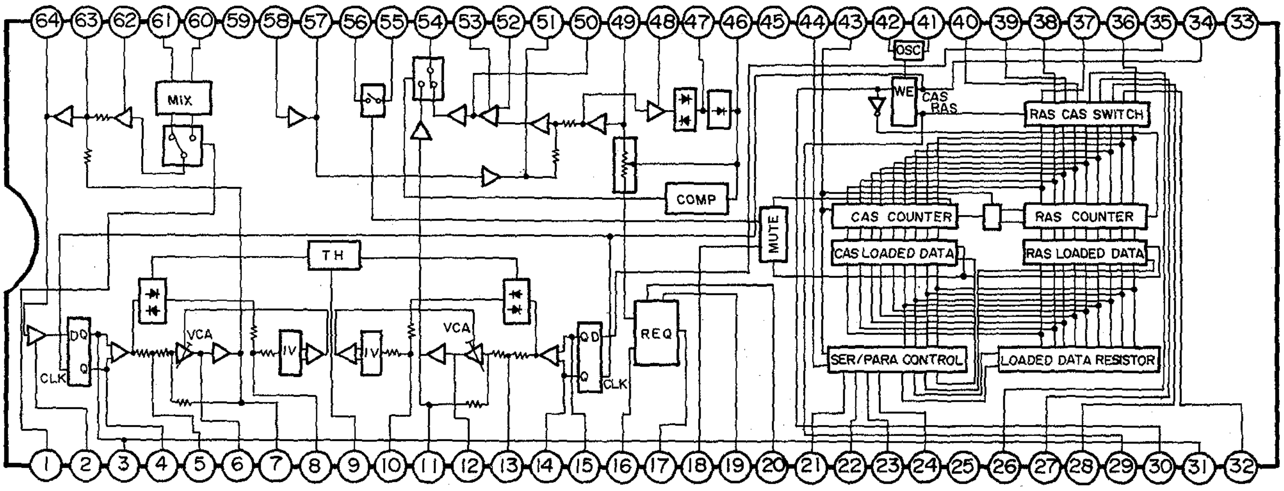
• General Description

The LV1000N is a monolithic integrated circuit designed for use in the Dolby Surround system. It is suitable for Passive Decoder. It contains all functions of this system, such as Fixed Matrix, Modified Dolby B−type noise reduction, 7kHz low pass filter and audio delay.
In this LSI, the Time Link Digital Delay system is adopted to the audio delay stage.
The Dolby Surround Passive Decoder can be constructed using the LV1000N, only with a memory IC, furthermore the Dolby Pro Logic Surround Decoder can also be constructed combined with the LA2770 (Dolby Pro Logic Surround Adaptive Matrix Decoder).

• Functions

- All functions for the Dolby Surround Passive Decoder.
  - Time Link Digital Delay system
  - Modified Dolby B−type noise reduction
  - 7 kHz low pass filter
  - Fixed matrix
- Variable delay time
- Simulated surround is available.
- Mute circuit
- V_{DD} power supply circuit

• Block Diagram


64
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45
44
43
42
41
40
39
38
37
36
35
34
33
OSC
MIX
WE
CAS
RAS
RAS CAS SWITCH
COMP
MUTE
CAS COUNTER
RAS COUNTER
CAS LOADED DATA
RAS LOADED DATA
TH
DQ
CLK
Q
VCA
IV
IV
VCA
QD
Q
CLK
REQ
SER/PARA CONTROL
LOADED DATA RESISTOR
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
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21
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27
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29
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31
32

• Function Explanations

Fixed Matrix :

Inject left channel signal to pin 61 and right channel signal to pin 60. When pin 1 is opened, L−R signal is generated and injected to the delay block for Dolby Surround or "Stage" Surround. When pin 1 is connected to GND, L+R signal is generated and injected to the delay block for "Hall" Surround or Simulated Stereo. (Pin1 is connected to GND in this device)

Mute Switch :

A mute circuit is on chip at pin 55 (input) and pin 56 (output). When pin 18 is connected to GND, this mute circuit is activated. Furthermore, when delay time setting is changed by using serial data input port, this is also activated while meaningless data on a memory are read (In case of parallel data input mode, mute circuit is controlled by switching pin 18). (Pin18 is always opened in this device)

System switch :

When pin 46 is opened, a delayed signal is output from pin 54 through the 7 kHz low pass filter and Modified NR. When pin 46 is connected to GND, a delayed signal is output from pin 54 directly. When pin 46 is connected to Vcc through 10 kΩ resistor, NR circuit is turned OFF. Then Delay circuit and 7 kHz low pass filter are used without NR circuit.

V_{DD} Supply :

Pin 20 is used as V_{DD} supply voltage by using the circuit of block diagram.

Delay time :

Delay time can be set by to be controlled pin 21 to 24 as following conditions.

Pin 43 control conditions (Always open in this device)

"H" or open : Short mode. maximum delay time = 30m seconds.
"L" or GND : Long mode. maximum delay time = 130m seconds.
(available only using 356k DRAM)

Pin 44 control conditions (Always open in this device)
This pin determines the data input port conditions such as pin 21, 22, 23 and 24.

"H" or open : Parallel data input mode. Delay time can be changed as follows.

Pin 43 conditions
Short mode : 2m seconds step.
Long mode : 8m seconds step.
"L" or GND : Serial data input mode. Delay time can be changed 0.5μ seconds step by control data bus.

Default mode
Default mode is available when pin21 to 24 and 43, 44 is opened. In this case, delay time is set to apporoximately 20m seconds.

Test pin :
Pin 45 is the test pin for testing this LSI itself. Usually this pin is used as open (No connections).

• Pin Function

Pin No.	Descriptions
1	Delay input signal mode select switch (L+R/L-R)
2	Filter for supply voltage on comparator
3, 15	Input filter for rectifier
4, 14	Input filter for rectifier
5, 13	Capacitor for pre-emphasis
6, 12	Capacitor for sliding band filter
7	Capacitor for sliding band filter and local decoder output
8, 10	Capacitor for smoothing of rectifier output
9	De-couple capacitor for threshold voltage
11	Capacitor for sliding band filter and Delayed output
16	Reference voltage
17	Reference voltage
18	Mute control
19	Vcc
20	Output for V_{DD}
21	Clock input for serial input, data input for parallel input mode
22	Data input for serial input, data input for parallel input mode
23	Column address selection for serial input, data input for parallel input mode
24	Row address selection for serial input, data input for parallel input mode
26 to 40	Connection to memory device
33	Vss
41	X'tal resonator for oscillator
42	X'tal resonator for oscillator
43	Long or Short mode selection
44	Serial or Parallel mode selection
45	For test mode
46	Smoothing for NR rectifier
47	Smoothing for NR rectifier
48	Capacitor for weighting on side chain path
49	Input for variable resistor
50	NR output
51	7 kHz low pass filter output
52	Input for NR
53	Capacitor for de-couple on NR
54	Delay output or NR output
55	Input for mute circuit
56	Output for mute circuit
57	Output for 7 kHz low pass filter
58	Input for 7 kHz low pass filter
59	GND
60	Input for right channel
61	Input for left channel
62	Capacitor for de-couple on Fixed matrix output
63	Noise shaping and delay input
64	Noise shaping output

• The way of setting delay time

This integrated circuit has a 16bits (short mode) or 18bits (long mode) counter for setting delay time. When counter value is full, counter value is set to user's define value. Delay time can be set by this define value. The ways of setting are following ,

Serial mode
Inject clock signal to pin 21 and address data to pin 22. (first MSB) As 9bits sift resistor get the data from pin22, pin 23 (CAS) or pin 24 (RAS) is controlled for selecting to send the data latch for column address or row address. Delay time is determined by counting time on this counter from user's define data to "FFFF" (when short mode). The clock for this counter is 2MHz, minimum step of definedata is 500ns.

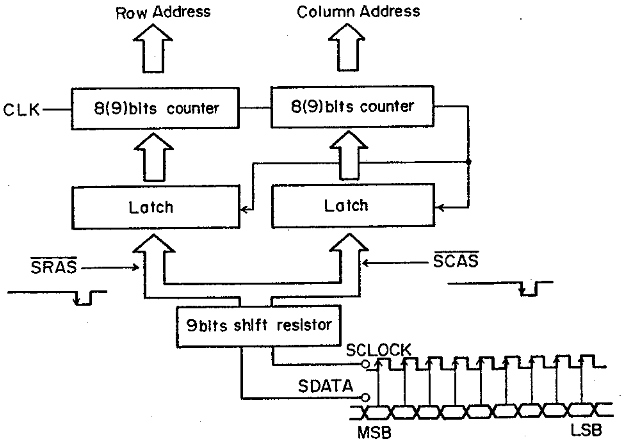
For example, when delay time is set to 20ms.
20ms ÷ 500ns = 40000 = 9C40 (HEX)
FFFF − 9C40 + 0001 = 63C0

Therefore, delay time can be set to 20ms, when counter value is set to 63C0.

Parallel mode
Pin 21 is also used as parallel data input port. Pin 21 is MSB and pin24 is LSB. These determine 4bits from MSB in the counter. Delay time can be set 2ms step on short mode or 8ms step on long mode. when pin 21 to 24 and pin 43 is opened, delay time is set to about 20ms. The relation of pin setting to delay time is following, (Pin21−S8, Pin22−S4, Pin23−S2, Pin24−S1)

S8	S4	S2	S1	SHORT MODE	LONG MODE
0	0	0	0	20.4ms	32.8ms
0	0	0	1	30.7ms	122.9ms
0	0	1	0	28.7ms	114.7ms
0	0	1	1	26.6ms	106.5ms
0	1	0	0	24.6ms	98.3ms
0	1	0	1	22.5ms	90.1ms
0	1	1	0	20.5ms	81.9ms
0	1	1	1	18.4ms	73.7ms
1	0	0	0	16.4ms	65.5ms
1	0	0	1	14.3ms	57.3ms
1	0	1	0	12.3ms	49.2ms
1	0	1	1	10.2ms	41.0ms
1	1	0	0	8.2ms	32.8ms
1	1	0	1	6.1ms	24.6ms
1	1	1	0	4.1ms	16.4ms
1	1	1	1	2.0ms	8.2ms

Table 1 Relationships between parallel data and delayed time

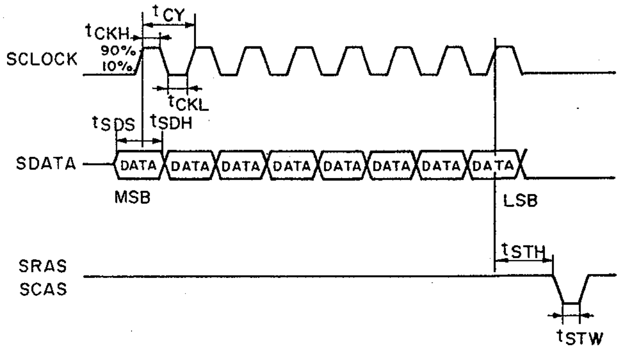


8bits data on short mode, 9bits data on long mode

Fig. 1 Serial mode input data format

• Input Address Port Timing

SHORT MODE



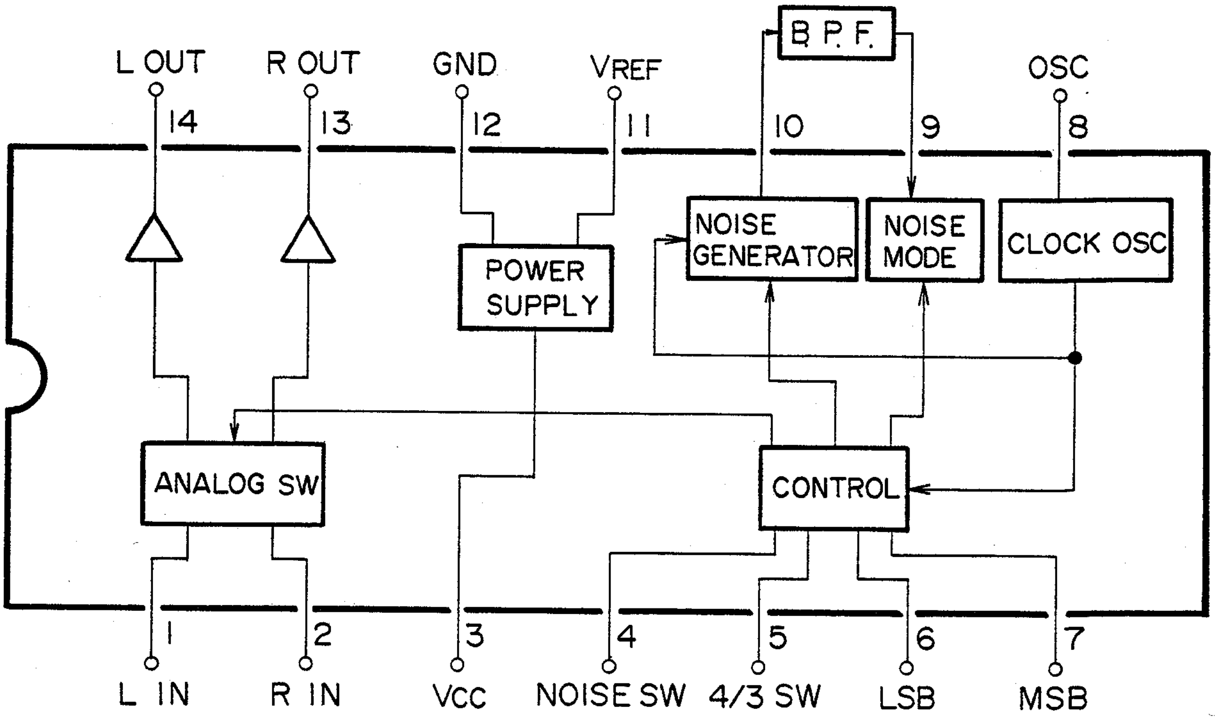
In case of short mode, delay time setting is set in above timing. The data loaded to SDATA is written on the leading edge timing. In order to select that the data latch for row address strobe or column address strobe is loaded, SRAS or SCAS port is controlled.
When changing delay time setting, meaningless data on a memory are read. This causes the pop noise. When SRAS or SCAS is controlled, mute circuit (pin55 is input, pin 56 is output) is activated. Mute time is the same as the delay time which is set at that time. (Serial data input mode only. On parallel data input mode, mute circuit is activated by using the mute control port pin 18.)
On long time, input data number is 9, the way of setting delay time is same.

IC905 (LA2775) : NOISE SEQUENCER

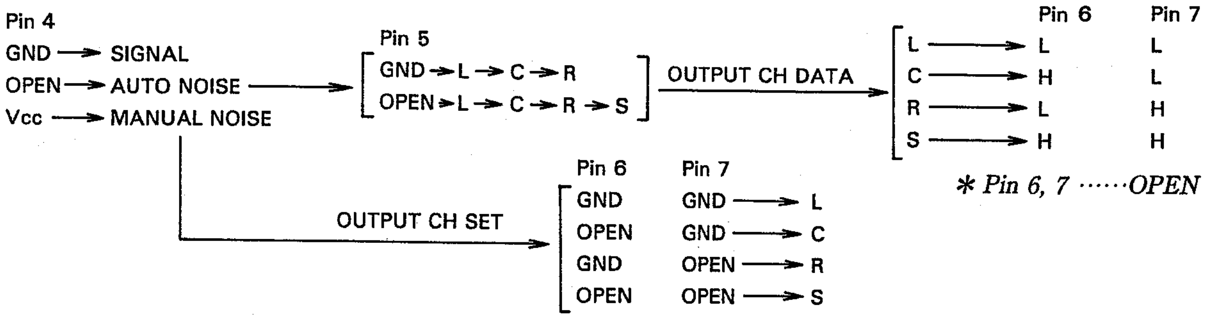
• Functions

Noise generator to adjust the output balance of the Dolby Pro-logic Surround signals.

• Block Diagram



L OUT
R OUT
GND
VREF
B P F
OSC
14
13
12
11
10
9
8
NOISE GENERATOR
NOISE MODE
CLOCK OSC
POWER SUPPLY
ANALOG SW
CONTROL
1
2
3
4
5
6
7
L IN
R IN
Vcc
NOISE SW
4/3 SW
LSB
MSB



Pin 4
GND → SIGNAL
OPEN → AUTO NOISE
Vcc → MANUAL NOISE
Pin 5
GND → L → C → R
OPEN → L → C → R → S
OUTPUT CH DATA
Pin 6
Pin 7
L → L L
C → H L
R → L H
S → H H
* Pin 6, 7 ······OPEN
OUTPUT CH SET
Pin 6
Pin 7
GND GND → L
OPEN GND → C
GND OPEN → R
OPEN OPEN → S

■ IC1001 (PDG069A) : SYSTEM CONTROL

• Pin Function

No.	Pin Name	I/O	Description	Logic	Port Set-ting
1	S4/PG0	O	FL Segment output		O
2	S5/PG1	O	FL Segment output		O
3	S6/PG2	O	FL Segment output		O
4	S7/PG3	O	FL Segment output		O
5	S8	O	FL Segment output		O
6	S9	O	FL Segment output		O
7	S10	O	FL Segment output		O
8	S11	O	FL Segment output		O
9	S12	O	FL Segment output		O
10	S13	O	FL Segment output		O
11	S14	O	FL Segment output		O
12	S15	O	FL Segment output		O
13	S16/T15	O	FL Segment output		O
14	S17/T14	O	FL Segment output		O
15	S18/T13	O	FL Segment output		O
16	S19/T12	O	FL Segment output		O
17	S20/T11	O	FL Segment output		O
18	S21/T10	O	Grid output and Key Scan output		O
19	S22/T9	O	Grid output and Key Scan output		O
20	S23/T8	O	Grid output and Key Scan output		O
21	T7	O	Grid output and Key Scan output		O
22	T6	O	Grid output and Key Scan output		O
23	T5	O	Grid output and Key Scan output		O
24	T4	O	Grid output and Key Scan output		O
25	T3	O	Grid output and Key Scan output		O
26	T2	O	Grid output and Key Scan output		O
27	T1	O	Grid output and Key Scan output		O
28	T0	O	Grid output and Key Scan output		O
29	INT	I	MK1/MK2 Switching ("1" : MK/ "0" : MK2)		I
30	XTAL	–	Not used		
31	EXTAL	I	Not used		I
32	$\overline{\text{RST}}$	I	RESET input		I
33	NC	–	Not used		
34	VDD	–	+5V Power supply		
35	AD0/PI0	I/O	Key Scan input		I
36	AD1/PI1	I/O	Key Scan input		I
37	AD2/PI2	I/O	Key Scan input		I
38	AD3/PI3	I/O	Key Scan input		I
39	AD4/PB0	I/O	Key Scan input		I
40	AD5/PB1	I/O	Key Scan input		I
41	PB2/AD6	I/O	Key Scan input		I
42	PB3/AD7	I/O	MODE Switching L : MODE A/ H : MODE B		I
43	NC	I			I
44	PX0/$\overline{\text{SC}}$	I/O	J/EX Switching and Serial CLK output		O
45	PX1/S0	I/O	9k/10k Switching and Serial DATA output		O

No.	Pin Name	I/O	Description	Logic	Port Setting
46	PX2/S1	I/O	TUNER $\overline{\text{STEREO}}$		I
47	PA0	I/O	TUNER MUTE		I
48	PA1	I/O	TUNER $\overline{\text{STOP}}$		I
49	PA2	I/O	TUNER CE		O
50	PA3	I/O	MSR REMOCON B input detection	"L"	I
51	PF0	O	DATA		O
52	PF1	O	CLK		O
53	PF2	O	STB1 (For IC101, 102)		O
54	PF3	O	STB2 (For IC103, 104, 1051, 912)		O
55	PE0	O	STB3 (For IC907)		O
56	PE1	O	MSR SP. Relay		O
57	PE2	O	VOLUME CONTROL DOWN		O
58	PE3	O	VOLUME CONTROL UP		O
59	PY0	O	VOLUME IND.		O
60	PY1/$\overline{\text{PWM}}$	O	CENTER/REAR SP. Relay		O
61	PY2/WP	I	WP		I
62	PY3/$\overline{\text{EC}}$/RMC	I	REMOCON input	"L"	I
63	PD0	O	AC Relay		O
64	PD1	O	VIDEO CONTROL		O
65	PD2	O	VIDEO CONTROL		O
66	PD3	O	VIDEO CONTROL		O
67	PC0	O	MSR VIDEO CONTROL		O
68	PC1	O	MSR VIDEO CONTROL		O
69	PC2	O	MSR VIDEO CONTROL		O
70	PC3	O	REC SEL.		O

No.	Pin Name	I/O	Description	Logic	Port Setting
71	Vss	–	GND		
72	TX	O	MAIN CLK output/ Connected to ceramic oscillator (4.19MHz)		O
73	NC	–	NC		
74	TEX	I	MAIN CLK input/ Connected to ceramic oscillator (4.19MHz)		I
75	VREF	–	Reference voltage input/ Connected to VDD		
76	VFDP	–	Power supply for FL		
77	S0/PH0	O	FL Segment output		O
78	S1/PH1	O	FL Segment output		O
79	S2/PH2	O	FL Segment output		O
80	S3/PH3	O	FL Segment output		O

9. REMOTE CONTROL UNIT (CU−VSX025)

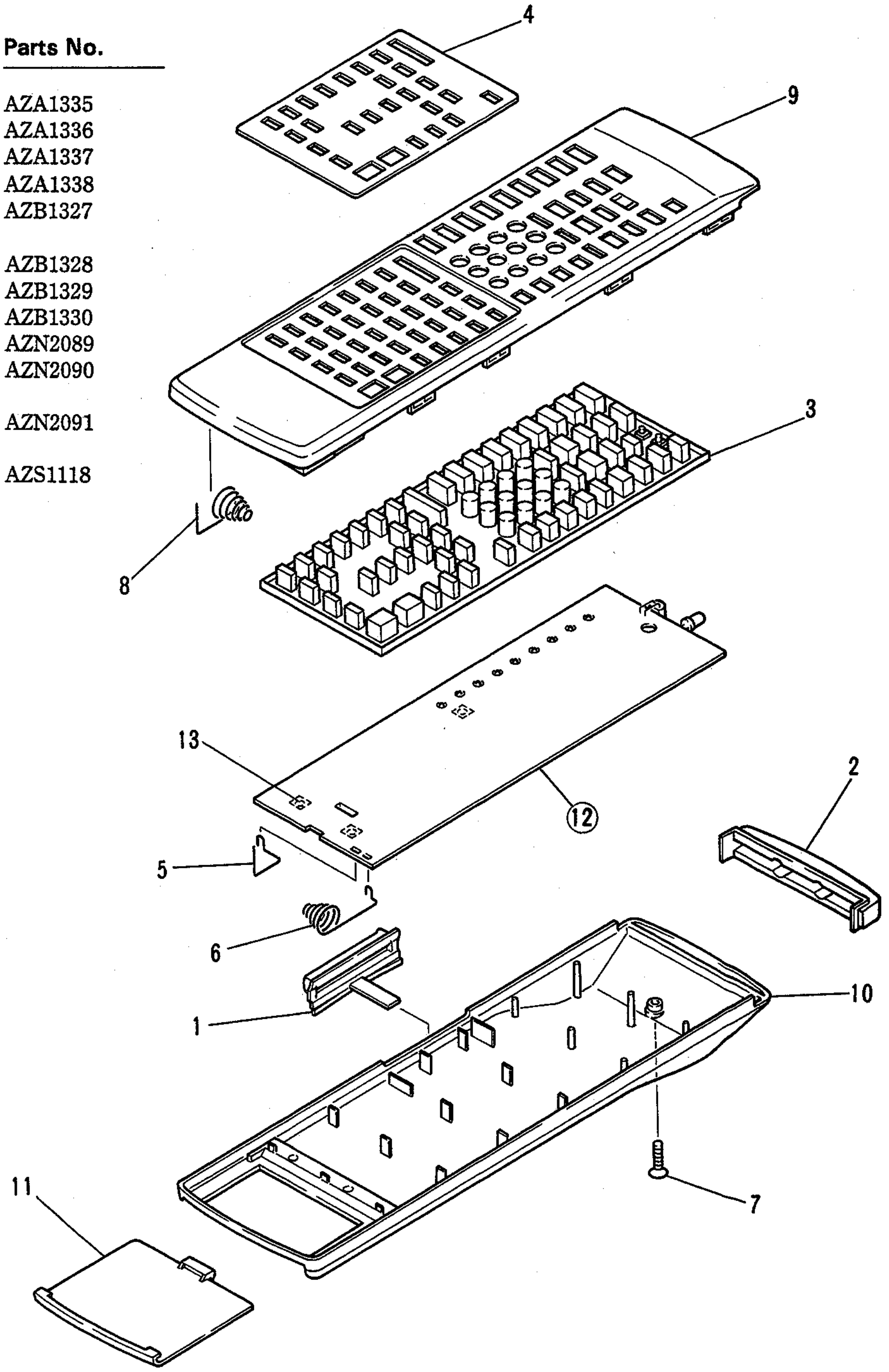
9.1 EXPLODED VIEWS AND PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts list of Exterior

Mark	No.	Description	Parts No.
	1	MODE CHECK KEY	AZA1335
	2	FILTER	AZA1336
	3	RUBBER SHEET	AZA1337
	4	PLATE	AZA1338
	5	TERMINAL (A, +)	AZB1327
	6	TERMINAL (B, −)	AZB1328
	7	SCREW	AZB1329
	8	TERMINAL (C)	AZB1330
	9	CASE (A)	AZN2089
	10	CASE (B)	AZN2090
	11	BATTERY CASE	AZN2091
	12	P.C.BOARD	
	13	TACT SW	AZS1118



9.2 ELECTRICAL PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
  560Ω 56×10^1 561........................RD1/4PS 5 6 1 J
  47kΩ 47×10^3 473........................RD1/4PS 4 7 3 J
  0.5Ω 0R5..RN2H 0 R 5 K
  1Ω 010..RS1P 0 1 0 K

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
  5.62kΩ 562×10^1 5621........................RN1/4SR 5 6 2 1 F

Mark	No.	Description	Parts No.
	IC1	μ−COM	ACM001−017
	IC2	IC	AZC1564
	IC3	LOGIC IC	MC74HC138F
	Q1, 2	CHIP TRANSISTOR	2SC3052E
	Q3, 4	POWER TRANSFORMER	2SD1622
	D1	DIODE	DWA010−TE
	D10−17	LED	AZC1573
	D2−6	DIODE	DWA010−TE
	D7	LED	SLR−938C
	D8	DIODE	SPS−503C−3
	D9	LED	AZC1573
CAPACITORS			
	C1, 2	CERAMIC CAPACITOR	CCDSL330J50
	C3	CERAMIC CAPACITOR	CCDSL221J50
	C4	CERAMIC CAPACITOR	CKDYX104M25
	C5	ELECTROLYTIC CAPACITOR	CEAS470M10
	C6	CERAMIC CAPACITOR	CKDYB103K50
	C7	ELECTROLYTIC CAPACITOR	CEAS221M10
	C8	ELECTROLYTIC CAPACITOR	CEAS4R7M50
RESISTORS			
	R7, 8	CARBON FILM RESISTOR	RD1/4PMFL1R5J
		Other resistors	RD1/8PM☐☐☐J
OTHERS			
	X1	RESONATOR	AZC1570

9.3 P.C.BOARD PATTERN

—▭— : Indicates a chip resistor.

—▮— : Indicates a chip capacitor.

: Indicates a chip transistor.

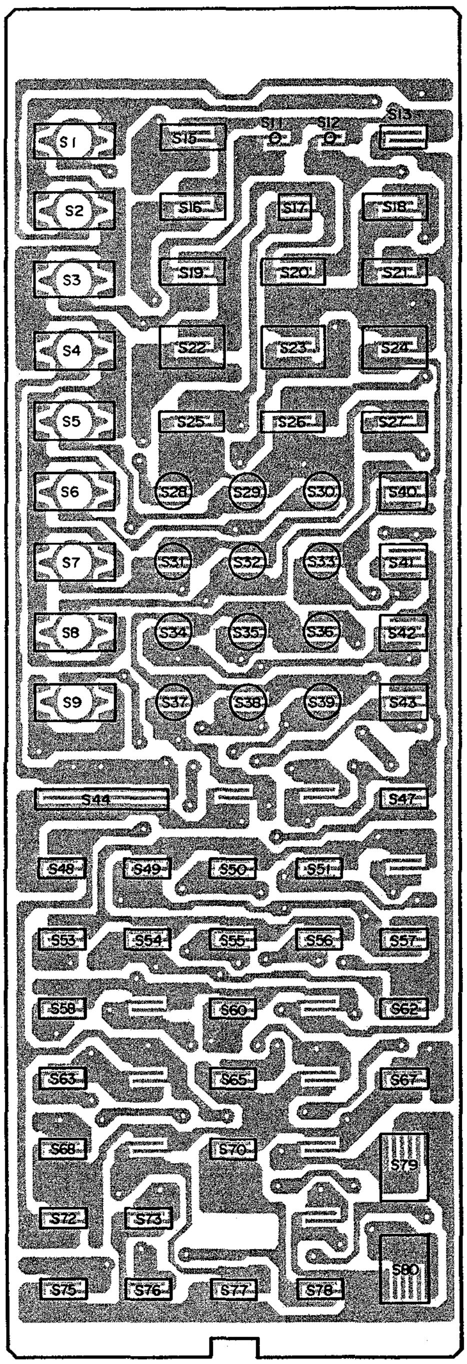
: Indicates a chip diode.

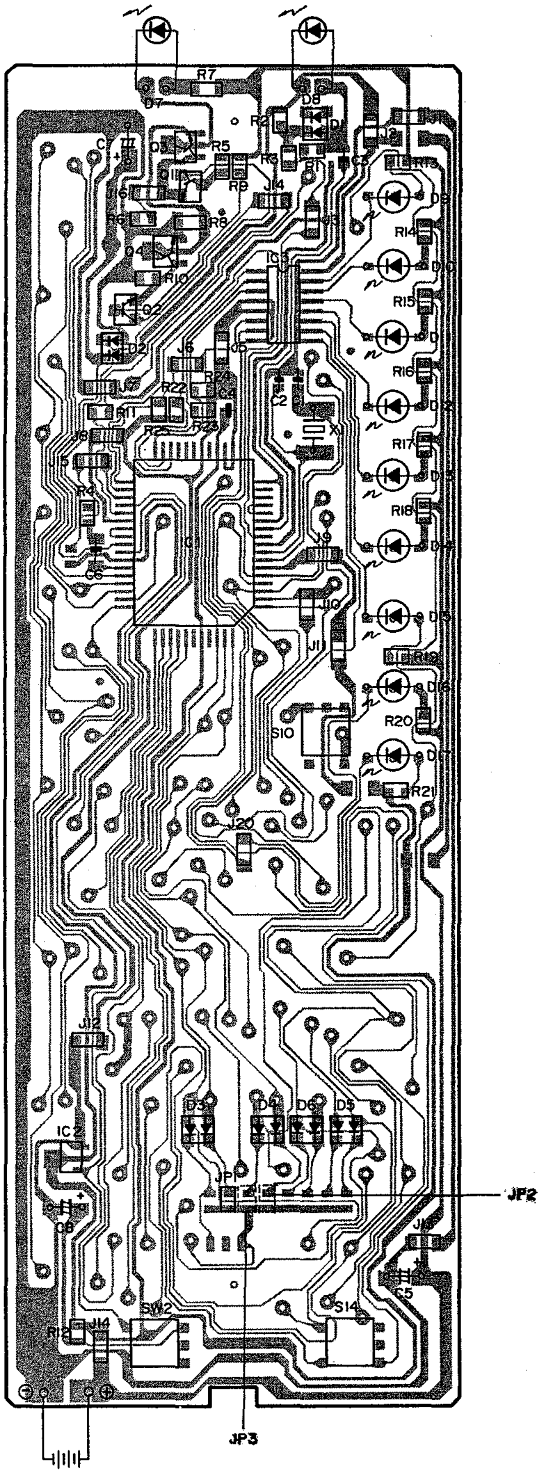
A

B

C

D


S1
S2
S3
S4
S5
S6
S7
S8
S9
S11
S12
S13
S15
S16
S17
S18
S19
S20
S21
S22
S23
S24
S25
S26
S27
S28
S29
S30
S31
S32
S33
S34
S35
S36
S37
S38
S39
S40
S41
S42
S43
S44
S47
S48
S49
S50
S51
S53
S54
S55
S56
S57
S58
S60
S62
S63
S65
S67
S68
S70
S79
S72
S73
S75
S76
S77
S78
S80


R7
D7
D8
R2
C7
Q1
R5
R3
R1
Q3
R9
J4
R6
R8
Q4
R10
Q2
D2
IC3
J6
R22
R24
C4
C2
X1
R11
R25
R23
R4
C6
IC1
J9
J10
J1
S10
J20
J12
D3
D4
D6
D5
IC2
JP1
JP2
C8
J13
C5
SW2
S14
R12
J14
JP3
R13
D9
R14
D10
R15
D11
R16
D12
R17
D13
R18
D14
D15
R19
D16
R20
D17
R21

9.4 SCHEMATIC DIAGRAM

NOTE)

JP2 : The terminal for switching Fc (carrier frequency of the fixed code). This terminal is set at OPEN (Fc = 40kHz) when delivered. If a product of another manufacturer accidentally receives the PIONEER code, short the terminal so that Fc will be 36.7kHz. (In which case, the learned code and preset code do not change.)

JP3 : This remote control saves the learned data, timing data in ROM and other data (such as code data) in RAM. ROM already contains the timing data for other primary manufacturers. JP3 is a terminal for switching whether or not to use that pre-loaded timing data during learning.
This terminal is set at OPEN when delivered. If "data is learned but the product does not operate," there is the rare possibility that learned timing data is affected by the timing data for another primary manufacturer in ROM, causing the receiving product to be deactivated. In such a case, short JP3 to clear all the learned data and restart data learning, so that the data precision is increased. (In which case, the learned data in RAM is shared as is.)

NOTE:

-□- : Indicates a chipresistor.

: Indicates a chipcapacitor.

: Indicates a chiptransistor.

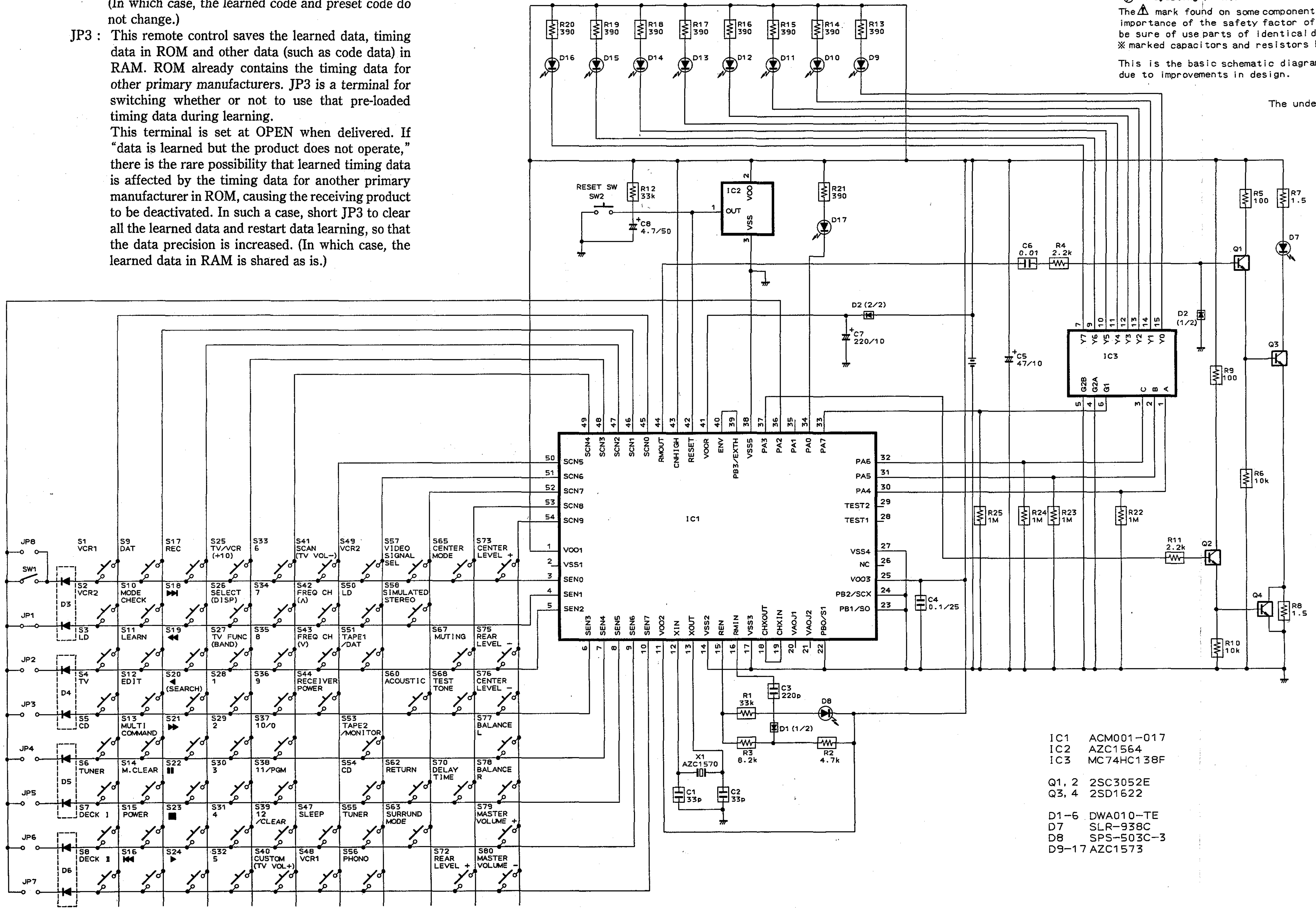
: Indicates a chipdiode.

1. RESISTORS:
Indicated in Ω, 1/4W, 1/8W, ±5% tolerance unless otherwise noted k:kΩ, M:MΩ, (F):±1%, (G):±2%, (K):±10%, (M):±20% tolerance.

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noed p:pF
Indication without voltage is 50V except electrolytic capacitor.

3. OTHERS:
➡ :Signal route.
⊘ :Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure of use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.


R20 390
R19 390
R18 390
R17 390
R16 390
R15 390
R14 390
R13 390
D16
D15
D14
D13
D12
D11
D10
D9
RESET SW SW2
R12 33k
C8 4.7/50
IC2
OUT
VDD
VSS
R21 390
D17
C6 0.01
R4 2.2k
D2 (2/2)
C7 220/10
C5 47/10
D2 (1/2)
IC3
Y7 Y6 Y5 Y4 Y3 Y2 Y1 Y0
G2B G2A G1 C B A
R5 100
R7 1.5
D7
Q1
Q3
R9 100
R6 10k
Q2
R11 2.2k
Q4
R8 1.5
R10 10k
IC1
SCN4 SCN3 SCN2 SCN1 SCN0 RMOUT CNHIGH RESET VOOR ENV PB3/EXTH VSS5 PA3 PA2 PA1 PA0 PA7
SCN5 SCN6 SCN7 SCN8 SCN9
VDD1 VSS1 SEN0 SEN1 SEN2
PA6 PA5 PA4 TEST2 TEST1
VSS4 NC VDD3 PB2/SCX PB1/SO
SEN3 SEN4 SEN5 SEN6 SEN7 VDD2 XIN XOUT VSS2 REN RMIN VSS3 CHXOUT CHXIN VAOJ1 VAOJ2 PB0/S1
R25 1M
R24 1M
R23 1M
R22 1M
C4 0.1/25
C3 220p
R1 33k
D8
D1 (1/2)
R3 8.2k
R2 4.7k
X1 AZC1570
C1 33p
C2 33p
JP8
SW1
JP1
JP2
JP3
JP4
JP5
JP6
JP7
D3
D4
D5
D6
S1 VCR1
S2 VCR2
S3 LD
S4 TV
S5 CD
S6 TUNER
S7 DECK Ⅰ
S8 DECK Ⅱ
S9 DAT
S10 MODE CHECK
S11 LEARN
S12 EDIT
S13 MULTI COMMAND
S14 M.CLEAR
S15 POWER
S16
S17 REC
S18
S19
S20 (SEARCH)
S21
S22
S23
S24
S25 TV/VCR (+10)
S26 SELECT (DISP)
S27 TV FUNC (BAND)
S28 1
S29 2
S30 3
S31 4
S32 5
S33 6
S34 7
S35 8
S36 9
S37 10/0
S38 11/PGM
S39 12 /CLEAR
S40 CUSTOM (TV VOL+)
S41 SCAN (TV VOL-)
S42 FREQ CH (Λ)
S43 FREQ CH (V)
S44 RECEIVER POWER
S47 SLEEP
S48 VCR1
S49 VCR2
S50 LD
S51 TAPE1 /DAT
S53 TAPE2 /MONITOR
S54 CD
S55 TUNER
S56 PHONO
S57 VIDEO SIGNAL SEL
S58 SIMULATED STEREO
S60 ACOUSTIC
S62 RETURN
S63 SURRUND MODE
S65 CENTER MODE
S67 MUTING
S68 TEST TONE
S70 DELAY TIME
S72 REAR LEVEL +
S73 CENTER LEVEL +
S75 REAR LEVEL -
S76 CENTER LEVEL -
S77 BALANCE L
S78 BALANCE R
S79 MASTER VOLUME +
S80 MASTER VOLUME -

IC1	ACM001-017
IC2	AZC1564
IC3	MC74HC138F
Q1, 2	2SC3052E
Q3, 4	2SD1622
D1-6	DWA010-TE
D7	SLR-938C
D8	SPS-503C-3
D9-17	AZC1573

The underline indicates the switch position
SW1: NOT USED
SW2: RESET
S1: VCR1
S2: VCR2
S3: LD
S4: TV
S5: CD
S6: TUNER
S7: DECK Ⅰ
S8: DECK Ⅱ
S9: DAT
S10: MODE CHECK
S11: LEARN
S12: EDIT
S13: MULTI COMMAND
S14: M.CLEAR
S15: POWER
S16: ⏮
S17: REC
S18: ⏭
S19: ⏪
S20: ◀ (SEARCH)
S21: ⏩
S22: ⏸
S23: ■
S24: ▶
S25: TV/VCR (+10)
S26: SELECT (DISP)
S27: TV FUNC (BAND)
S28: 1
S29: 2
S30: 3
S31: 4
S32: 5
S33: 6
S34: 7
S35: 8
S36: 9
S37: 10/0
S38: 11/PGM
S39: 12/CLEAR
S40: CUSTOM (TV VOL+)
S41: SCAN (TV VOL-)
S42: FREQ CH (Λ)
S43: FREQ CH (V)
S44: RECEIVER POWER
S47: SLEEP
S48: VCR1
S49: VCR2
S50: LD
S51: TAPE1/DAT
S53: TAPE2/MONITOR
S54: CD
S55: TUNER
S56: PHONO
S57: VIDEO SIGNAL SEL
S58: SIMULATED STEREO
S60: ACOUSTIC
S62: RETURN
S63: SURROUND MODE
S65: CENTER MODE
S67: MUTING
S68: TEST TONE
S70: DELAY TIME
S72: REAR LEVEL (+)
S73: CENTER LEVEL (+)
S75: REAR LEVEL (-)
S76: CENTER LEVEL (-)
S77: BALANCE L
S78: BALANCE R
S79: MASTER VOLUME +
S80: MASTER VOLUME -

10. FOR VSX−4800/KUC, SD, VSX−51/KU AND VSX−4950S/KC TYPES

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CONTRAST OF MISCELLANEOUS PARTS

The VSX−4800/KUC, SD, VSX−51/KU and VSX−4950S/KC types are the same as the VSX−4900S/KUC types with the exception of the following sections

Mark	Symbol & Description	Part No.					Remarks
		VSX−4900S/ KUC type	VSX−4800/ KUC type	VSX−4800/ SD type	VSX−51/ KU type	VSX−4950S/ KC type	
◉	AF assembly	AWZ3605	AWZ3605	AWZ3605	AWZ3595	AWZ3595	
	MR assembly	....	....	....	Non supply	Non supply	
◉	SUR assembly	AWZ3606	AWZ3606	AWZ3606	AWZ3601	AWZ3601	
◉	FL assembly	AWZ3607	AWZ3607	AWZ3607	AWZ3602	AWZ3602	
◉	V/SP assembly	AWZ3608	AWZ3608	AWZ3608	AWZ3603	AWZ3603	
⚠	S1 Voltage selector switch (AC110V/120−127V/220V/240V)	....	....	AKX−507	....	....	
⚠	S2 Voltage selector switch (AC110−127V/220−240V)	....	....	AKX1004	....	....	
	S3 Slide switch (9kHz/10kHz)	....	....	ASH−004	....	....	
⚠	T1 Power transformer	ATS1353	ATS1353	ATS1354	ATS1353	ATS1353	
⚠	FU1 Fuse (8A/125V)	AEK1002	AEK1002	....	AEK1002	AEK1002	
⚠	FU1 Fuse (4A/125V)	....	....	AEK−125	....	....	
⚠	FU2 Fuse (4A/125V)	....	....	AEK−125	....	....	
⚠	AC Power cord	ADG1058	ADG1058	ADG1051	ADG1058	ADG1058	
	Strain relief	AEP−113	AEP−113	AEC−882	AEP−113	AEP−113	
	PVC panel	AAK2141	AAK2141	AAK2141	AAK2143	AAK2143	
	Lens	....	....	....	AAK2144	AAK2144	
	Front panel	AMB1831	AMB1830	AMB1830	AMB1802	AMB1844	
	Screw	....	....	VMZ26P040FZK	....	....	
	Packing case	AHD2028	AHD2027	AHD2137	AHD2026	AHD2107	
	Operating instructions (Spanish)	....	....	ARC1267	....	....	
	Operating instructions (French)	....	....	....	....	ARC1287	
	Remote control unit (CU−VSX025)	AXD1206	....	....	AXD1206	AXD1206	
	Remote control unit (CU−VSX026)	....	....	AXD1205	AXD1205	....	....
	Case (C)	....	....	AZN1811	AZN1811	....	....

◉ AF assembly (AWZ3595)

The AF assembly (AWZ3595) is the same as the AF assembly (AWZ3605) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ3605	AWZ3595	
	Q304	....	2SA1048	
	D318	....	1SS252	
	C301, C302(8200/71)	ACH1204	....	
	C301 (8200/71)	....	ACH1200	
	C302 (8200/71)	....	ACH1199	
	R310	....	RD1/8PM224J	
	R312	....	RD1/8PM103J	
	R314, R316	....	RD1/8PM102J	
	R372, R373	....	RD1/4PM471J	
	CN8	KPE10	KPE12	
	CN20	....	AKM1073	
	Pin jack (6P)	AKB1121	....	
	Pin jack (6P)	....	AKB1135	
	Pin jack (6P)	....	AKB1148	

◉ FL assembly (AWZ3602)

The FL assembly (AWZ3602) is the same as the FL assembly (AWZ3607) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ3607	AWZ3602	
	Q1004	....	XDC143ES	
	D1003, D1004	....	AEL1113	
	S1048, S1049	....	ASG1029	
	R1107, R1113	RD1/8PM473J	....	
	R1127	....	RD1/8PM473J	

◉ V/SP assembly (AWZ3603)

The V/SP assembly (AWZ3603) is the same as the V/SP assembly (AWZ3608) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ3608	AWZ3603	
	IC852	…………………	CX−894	
	IC853	…………………	NJM2233BS	
	Q807	…………………	XDC143ES	
	Q850, Q863−Q865, Q867	…………………	2SC2458	
	Q860	…………………	XDC124ES	
	Q866	…………………	2SA1048	
	D805, D807, D856−D859, D861−D868, D894−D897	…………………	1SS252	
	D869	…………………	RD4.7ESB	
	RY802	…………………	ASR1035	
	C859	…………………	CCMSL080D50	
	C860, C864−C866	…………………	CEAS4R7M50	
	C862	…………………	CKDYF103Z50	
	C863, C868	…………………	CEAS470M16	
	R837	…………………	RD1/4PMF101J	
	R845, R846, R848, R849, R895, R896	…………………	RD1/8PM103J	
	R847, R880, R887−R889, R892, R894	…………………	RD1/8PM472J	
	R879	…………………	RD1/8PM680J	
	R881, R883	…………………	RD1/8PM122J	
	R882	…………………	RD1/8PM561J	
	R884	…………………	RD1/8PM821J	
	R885	…………………	RD1/8PM101J	
	R886, R893	…………………	RD1/8PM224J	
	R881	…………………	RD1/8PM122J	
	R890, R891	RD1/8PM472J	…………………	
	R897	…………………	RD1/8PM471J	
	R1131	…………………	RD1/8PM103J	
	CN Pin jack (3P)	…………………	AKB1170	
	Speaker terminal (4−P)	AKE−109	…………………	
	Speaker terminal (8−P)	…………………	AKE−111	

◉ SUR assembly (AWZ3601)

The SUR assembly (AWZ3601) is the same as the SUR assembly (AWZ3606) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ3606	AWZ3601	
	IC909	....	XRU4066B	
	Q915	....	XDA124ES	
	Q916	....	XDC124ES	
	R972, R974	....	RD1/8PM102J	
	R973	....	RD1/8PM103J	
	R998, R999	....	RD1/8PM153J	
	R1000	....	RD1/8PM621J	
	R1001	....	RD1/8PM471J	
	CN14	KPE8	KPE13	

MR assembly (VSX−51/KU and VSX−4950S/KC only)

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56 × 10¹ 561..........................RD1/4PS$\boxed{5}\boxed{6}\boxed{1}$J
47kΩ 47 × 10³ 473..........................RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5Ω 0R5..RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1Ω 010..RS1P$\boxed{0}\boxed{1}\boxed{0}$K

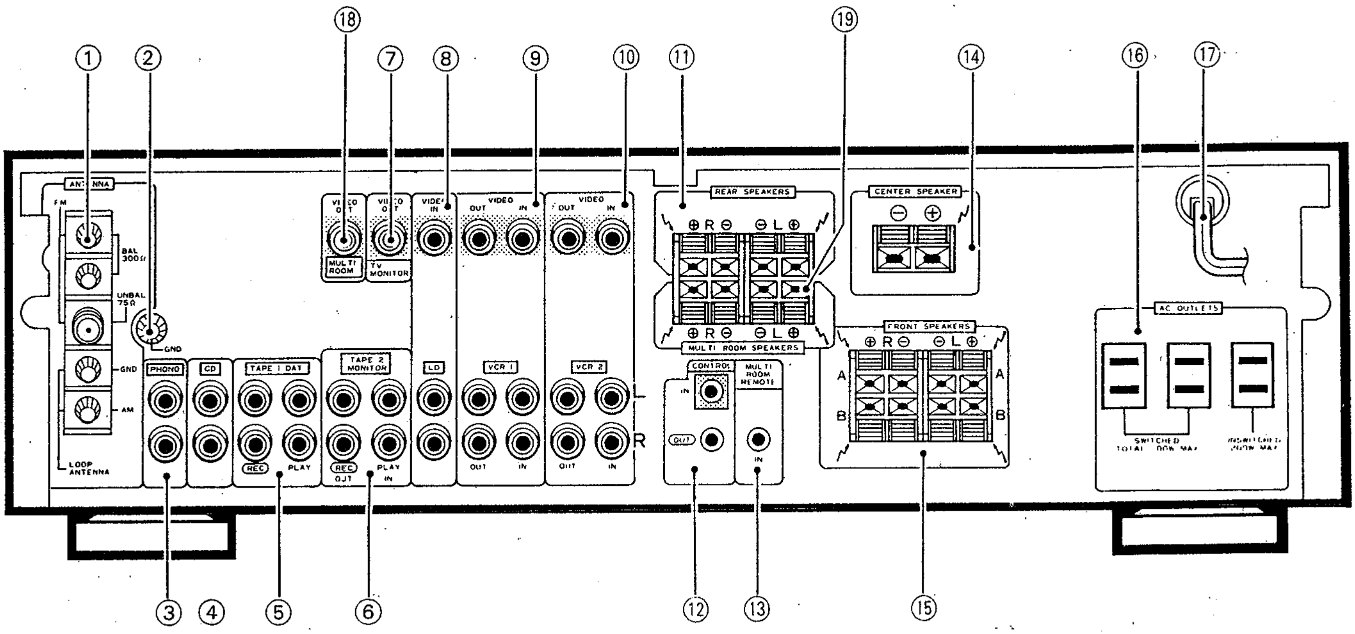
Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10¹ 5621........................RN1/4SR$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

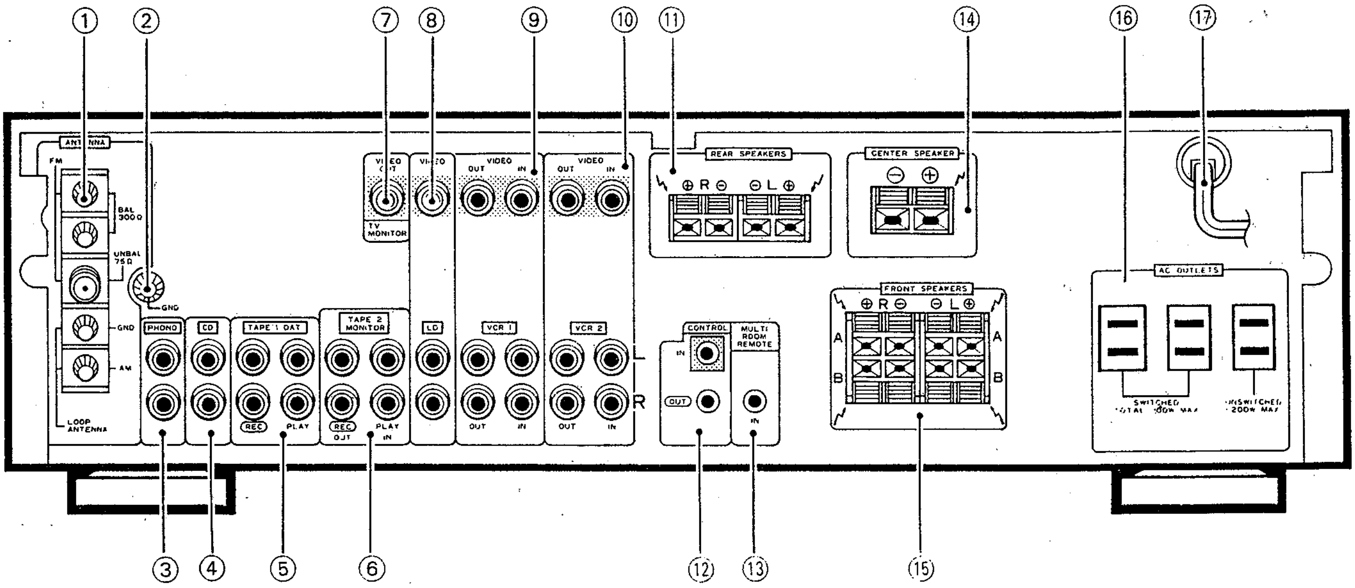
Mark No.	Description	Parts No.
SEMICONDUCTORS		
IC1051	E−SW IC	TC9164N
IC1052	OP−AMP IC	RC4558DXP
CAPACITORS		
C1051−1054	ELECTR.CAPACITOR	CEAS4R7M50
C1055, 1056	ELECTR.CAPACITOR	CEAS470M25
C1057	CERAMIC CAPACITOR	CKDYB102K50
RESISTORS		
	All resistors	RD1/8PM□□□J
OTHERS		
CN17, 18	CONNECTOR (15P)	KPE15

11. PANEL FACILITIES

VSX-51/VSX-4950S


⑱
⑲
①
②
⑦
⑧
⑨
⑩
⑪
⑭
⑯
⑰
ANTENNA
FM
BAL 300Ω
UNBAL 75Ω
GND
AM
LOOP ANTENNA
PHONO
CD
TAPE 1 DAT
REC
PLAY
TAPE 2 MONITOR
REC OUT
PLAY IN
VIDEO OUT
MULTI ROOM
VIDEO OUT
TV MONITOR
VIDEO IN
LD
VIDEO OUT IN
VCR 1
OUT IN
VIDEO OUT IN
VCR 2
OUT IN
L
R
REAR SPEAKERS
⊕R⊖ ⊖L⊕
MULTI ROOM SPEAKERS
CENTER SPEAKER
⊖ ⊕
FRONT SPEAKERS
⊕R⊖ ⊖L⊕
A
B
CONTROL
IN
OUT
MULTI ROOM REMOTE
IN
AC OUTLETS
SWITCHED TOTAL 100W MAX
UNSWITCHED 200W MAX
③
④
⑤
⑥
⑫
⑬
⑮

VSX-4800/VSX-4900S


①
②
⑦
⑧
⑨
⑩
⑪
⑭
⑯
⑰
ANTENNA
FM
BAL 300Ω
UNBAL 75Ω
GND
AM
LOOP ANTENNA
PHONO
CD
TAPE 1 DAT
REC
PLAY
TAPE 2 MONITOR
REC OUT
PLAY IN
VIDEO OUT
TV MONITOR
VIDEO
LD
VIDEO OUT IN
VCR 1
OUT IN
VIDEO OUT IN
VCR 2
OUT IN
L
R
REAR SPEAKERS
⊕R⊖ ⊖L⊕
CENTER SPEAKER
⊖ ⊕
FRONT SPEAKERS
⊕R⊖ ⊖L⊕
A
B
CONTROL
IN
OUT
MULTI ROOM REMOTE
IN
AC OUTLETS
SWITCHED TOTAL 100W MAX
UNSWITCHED 200W MAX
③
④
⑤
⑥
⑫
⑬
⑮

① FM/AM ANTENNA terminals

Use these antenna terminals for reception of normal FM and AM broadcasts.

② GND terminal

Connect the turntable ground lead to this terminal.

③ PHONO input jacks

Connect to the output cables from a turntable.

④ CD input jacks

Connect to the output jacks of a compact disc player.

⑤ TAPE 1/DAT jacks

Use these to connect the first cassette deck or first DAT (digital audio tape) deck.

Connecting for Recording
The tape recording jack (REC) on the cassette deck or DAT should be connected to the REC side of the TAPE 1/DAT jack on the receiver with a pin plug connecting cord.

Connecting for Playback
Connect the PLAY jack on the cassette deck or DAT to the PLAY side of the TAPE 1/DAT jack on the receiver with a pin plug connecting cord.

⑥ TAPE 2 MONITOR jacks

Connect the second cassette deck to these jacks.

Connecting for Recording
The tape recording jack (REC) on the cassette deck should be connected to the REC side of the TAPE 2 MONITOR jack on the receiver with a pin plug connecting cord.

Connecting for Playback
Connect the TAPE PLAY jack on the cassette deck to the PLAY side of the TAPE 2 MONITOR jack on the receiver with a pin plug connecting cord.

⑦ VIDEO OUT (TV MONITOR) jack

Connect to monitor TV or to TV sets with video input terminals for watching program materials from a VCR 1, 2 or LD player connected to this unit.

⑧ LD jacks

[VIDEO IN]
When watching the video image from a LD player, connect its VIDEO OUTPUT jacks here.

[AUDIO IN (L, R)]
When playing back the audio channel from a LD player, connect its AUDIO OUTPUT jacks here.

⑨ VCR 1 jacks

[VIDEO OUT]
When copying program material from the video component connected to the VCR 2 or LD jacks, connect to the VIDEO INPUT jacks of the VCR used for recording.

[AUDIO OUT (L, R)]
When copying program material from the video component connected to the VCR 2 or LD jacks, or when recording music from an audio component source, connect to the AUDIO INPUT jacks of the VCR used for recording.

[VIDEO IN]
When monitoring the video image from a VCR used for playing, connect its VIDEO OUTPUT jacks here.

[AUDIO IN (L, R)]
When monitoring the audio channel from a VCR used for playing, connect its AUDIO OUTPUT jacks here.

⑩ VCR 2 jacks

[VIDEO OUT]
When copying program material from the video component connected to the VCR 1 or LD jacks, connect to the VIDEO INPUT jacks of the VCR used for recording.

[AUDIO OUT (L, R)]
When copying program materials from the video component connected to the VCR 1 or LD jacks, or when recording music from an audio component source, connect to the AUDIO INPUT jacks of the VCR used for recording.

[VIDEO IN]
When monitoring the video image from a VCR used for copying, connect its VIDEO OUTPUT jacks here.

[AUDIO IN (L, R)]
When monitoring the audio channel from a VCR used for copying, connect its AUDIO OUTPUT jacks here.

⑪ REAR SPEAKERS terminals

Connect the rear speakers to these terminals.

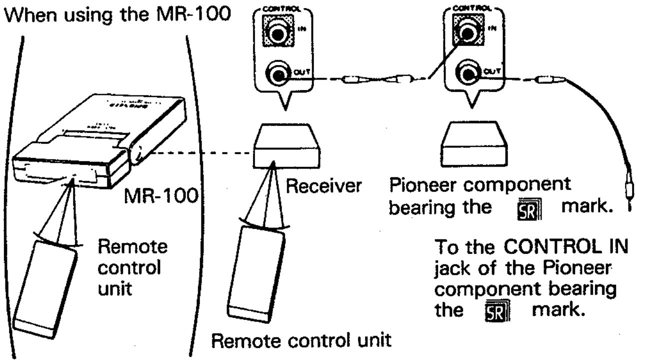
NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.
Use rear speakers of impedance 8 Ω — 16 Ω.

⑫ CONTROL IN/OUT jacks

IN: Connect this jack to other Pioneer components (main unit or remote control unit) when using those components to control this unit.
OUT: Connect this jack to other Pioneer components when using the remote control of this unit to control the other components.

NOTE:
The receiver's remote sensor does not function when a plug is inserted in IN jack. To operate, point the remote control unit at the remote sensor on the component to which the receiver's IN jack is connected.

When using the MR-100


CONTROL
IN
OUT
CONTROL
IN
OUT
MR-100
Receiver
Pioneer component bearing the SR mark.
Remote control unit
To the CONTROL IN jack of the Pioneer component bearing the SR mark.
Remote control unit

⑬ MULTI-ROOM REMOTE IN jack

Connect to the separately sold MR-100 Multi-Room remote control unit.

⑭ CENTER SPEAKER terminals

Connect the center speaker to these terminals.

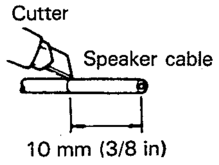
NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.
Use center speakers of impedance 8 Ω—16 Ω.

⑮ FRONT SPEAKERS terminals

A: Connect to the first set of speakers.
B: Connect to the second set of speakers.

Speaker lead wire preparation and connection.

1



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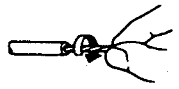
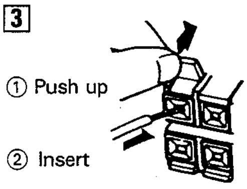


Twist the strands.

3



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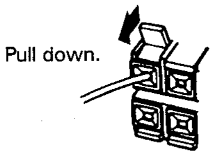


NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctions or breakdowns may occur when conductors come into contact with each other.
Use speakers of impedance 8 Ω–16 Ω.

⑯ AC OUTLETS
[U.S. and Canadian models]

[SWITCHED TOTAL 100 W (0.8 A) MAX]
Power supplied through these outlets is turned on and off by the receiver's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W (0.8 A).
[UNSWITCHED 200 W (1.6 A) MAX]
Power flows continually to this outlet, regardless of whether the receiver is switched ON or OFF. Electrical power consumption of the connected equipment should not exceed 200 W (1.6 A).
The equipment should be disconnected by removing the power plug from the wall socket when not in regular use, e.g. when on vacation.

[Multi-voltage model]

SWITCHED TOTAL 100 W MAX
Power supplied through these outlets is turned on and off by the receiver's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.
UNSWITCHED 100 W MAX
Power flows continually to this outlet, regardless of whether the receiver is switched ON or OFF. Electrical power consumption of the connected equipment should not exceed 100 W.

NOTE:
- *This unit should be disconnected by removing the power plug from the wall socket when not in regular use, e.g. when on vacation.*
- *Do not connect appliances with high power consumption such as heaters, irons, or television sets to these AC OUTLETS in order to avoid overheating and fire risk.*
  This can cause the receiver to malfunction.

CAUTION:
DO NOT CONNECT MONITOR OR TV SET.

⑰ Power cord

⑱ VIDEO OUT (MULTI-ROOM) jack
(VSX-51/VSX-4950S)

Connect the TV monitor for use in Sub room.

⑲ MULTI-ROOM SPEAKERS terminals
(VSX-51/VSX-4950S)

Connect Multi-Room & Source Sub-Room speakers.

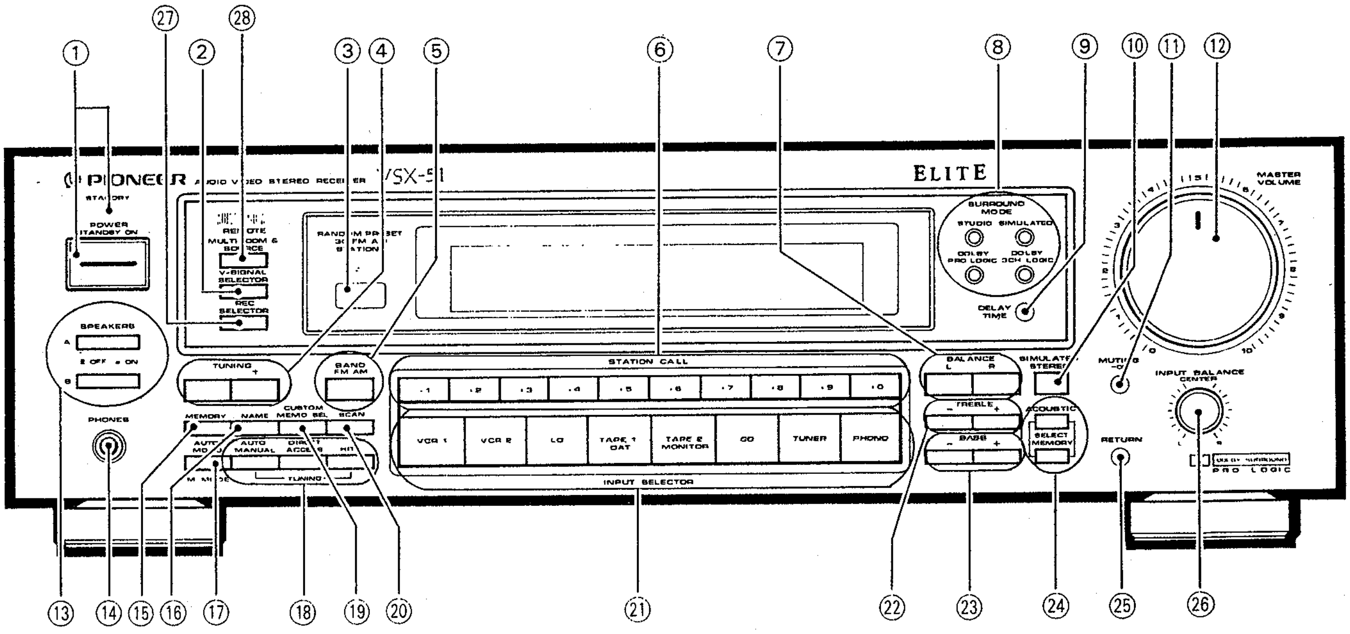
NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.
Use rear speakers of impedance 8 Ω–16 Ω.

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

VSX-51/VSX-4950S

* Illustration shows model VSX-51.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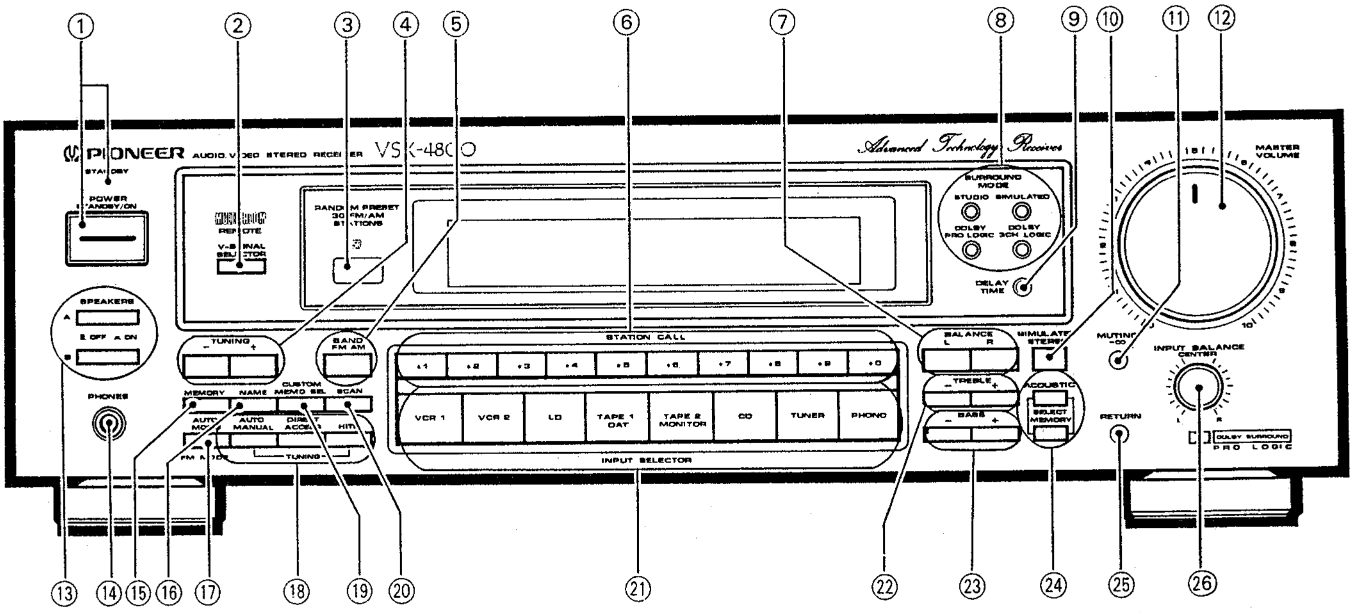
PIONEER AUDIO VIDEO STEREO RECEIVER VSX-51
ELITE
STANDBY
POWER STANDBY ON
REMOTE
MULTI ROOM & SOURCE
V-SIGNAL SELECTOR
REC SELECTOR
RANDOM PRESET 30 FM AM STATION
SURROUND MODE
STUDIO
SIMULATED
DOLBY PRO LOGIC
DOLBY 3CH LOGIC
DELAY TIME
MASTER VOLUME
SPEAKERS
A
B
OFF
ON
TUNING
BAND FM AM
STATION CALL
BALANCE L R
SIMULATED STEREO
MUTING
INPUT BALANCE CENTER
PHONES
MEMORY
NAME
CUSTOM MEMO SEL
SCAN
AUTO MONO
AUTO MANUAL
DIRECT ACCESS
HIT
FM MODE
TUNING
VCR 1
VCR 2
LD
TAPE 1 DAT
TAPE 2 MONITOR
CD
TUNER
PHONO
INPUT SELECTOR
TREBLE
BASS
ACOUSTIC
SELECT MEMORY
RETURN
DOLBY SURROUND PRO LOGIC

VSX-4800/VSX-4900S

* Illustration shows model VSX-4800.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PIONEER AUDIO VIDEO STEREO RECEIVER VSX-4800
Advanced Technology Receiver
STANDBY
POWER STANDBY/ON
REMOTE
V-SIGNAL SELECTOR
RANDOM PRESET 30 FM/AM STATIONS
SURROUND MODE
STUDIO
SIMULATED
DOLBY PRO LOGIC
DOLBY 3CH LOGIC
DELAY TIME
MASTER VOLUME
SPEAKERS
A
B
OFF
ON
TUNING
BAND FM AM
STATION CALL
BALANCE L R
SIMULATED STEREO
MUTING
INPUT BALANCE CENTER
PHONES
MEMORY
NAME
CUSTOM MEMO SEL
SCAN
AUTO MONO
AUTO MANUAL
DIRECT ACCESS
HIT
FM MODE
TUNING
VCR 1
VCR 2
LD
TAPE 1 DAT
TAPE 2 MONITOR
CD
TUNER
PHONO
INPUT SELECTOR
TREBLE
BASS
ACOUSTIC
SELECT MEMORY
RETURN
DOLBY SURROUND PRO LOGIC

① POWER STANDBY/ON switch/STANDBY indicator

This is the switch for electric power.

ON: When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is STANDBY, and goes out during ON.

[Timer ON/OFF possible]

When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE:

When the power is initially turned ON, muting will be applied to prevent sound from being output for about 5 seconds.

② V-SIGNAL (VIDEO SIGNAL) SELECTOR button

Use to change the video signal in sequence leaving the sound unchanged.

→ VCR 1 → VCR 2 → LD → OFF

The current setting is shown by an indicator on the display section.

③ Remote sensor

④ TUNING buttons

+ : Performs tuning from the currently displayed station frequency in ascending frequency order.

– : Performs tuning in order of descending frequencies.

⑤ BAND (FM/AM) button

Use this to switch between FM and AM frequency band reception.

⑥ STATION CALL buttons

Up to 30 FM or AM stations can be preset at random.
These buttons are used to preset and recall desired broadcasting stations, FM AUTO/MONO mode.

NOTE:

Pressing a BAND button or STATION CALL button will select TUNER as the source, regardless of what other listening source or function was selected.

⑦ BALANCE buttons

Use them to adjust the sound volume balance between left and right speakers.

L: Press to decrease the sound on the right side.

R: Press to decrease the sound on the left side.

Press L and R together to bring the volume balance back to center.

NOTE:

The left-right sound volume balance cannot be adjusted on the rear speakers.

⑧ SURROUND MODE selector buttons

STUDIO:

Select this setting to enjoy the effect of listening to music in a recording studio.

SIMULATED:

Select this setting when listening to music or a monaural source, etc. With a monaural source, a much better surround effect is achieved if it is used together with SIMULATED STEREO.

DOLBY PRO LOGIC SURROUND:

Select this setting when watching video tapes or video discs bearing the DD DOLBY SURROUND mark.

DOLBY 3CH LOGIC:

Select this setting when stereo-source regeneration and rear speakers are not connected and you wish to use the front L, front R, and center speakers to enjoy audio/visual material bearing the DD DOLBY SURROUND mark.

⑨ DELAY TIME button

Operates when the SIMULATED or DOLBY PRO LOGIC SURROUND mode is ON.
Switches to surround delay time in 8 steps. For DOLBY PRO LOGIC SURROUND, 20 ms is standard.
Changes in 2 ms steps.

→ 16 ms → 18 ms → ...... → 28 ms → 30 ms

⑩ SIMULATED STEREO button

Press to produce a simulated stereo effect when listening to monaural sources (for example, normal AM or TV broadcasts).
"SIMULATED STEREO" appears on the display section.

NOTE:

- *This effect is not produced through the rear speakers.*
- *Use with the SURROUND MODE in the OFF.*

⑪ MUTING button

Press to temporarily cut off the sound volume. The display section MUTING indicator will flash. When pressed again, the sound will return to its previous level.

⑫ MASTER VOLUME control

Use it to simultaneously adjust the sound volume from the front, center and rear speakers.

⑬ SPEAKERS buttons (A, B) ■ OFF ▄ ON

ON/OFF switches for the A and B speaker systems.

NOTE:

No sound will be heard thorough the speakers when both A and B buttons are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

⑭ PHONES jack

Connect the plug on your headphones to this jack. Set all SPEAKERS A and B switches to OFF if you want to cut the sound from speakers and listen to it only through the headphones.

⑮ MEMORY button

Pressing this button will result in the memorization of the current broadcast band, reception frequency, and FM AUTO/MONO mode. This button is also used to input station names , and custom memory operation.

⑯ NAME button

This button is used when inputting station names

⑰ FM MODE AUTO/MONO button

Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the FM MONO indicator in the display section is lit.

Auto stereo mode:
Normally, leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo.

Monaural mode:
When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise. In this case, however, FM stereo broadcasts will be reproduced in monaural sound.

NOTE:
This button has no effect on reception of AM broadcasts.

⑱ TUNING buttons

AUTO/MANUAL TUNING selector button

Use to select the tuning mode. To select the AUTO tuning mode, press this button to light the AUTO TUNING indicator in the display section. To select the MANUAL tuning mode, switch off the AUTO TUNING indicator.

AUTO tuning
When the – or + TUNING button is pressed, the receiver automatically scans the broadcast station frequencies. When a broadcast is detected, the scanning stops at that frequency.

NOTE:
Pressing the TUNING button (– or +) while scanning is taking place causes scanning to stop.

MANUAL tuning
This lets you manually tune to particular broadcast frequencies. Each press of the + or – button raises or lowers the frequency by one tuning step. For continuous scanning, keep the button pressed, then release it to stop scanning.

DIRECT ACCESS TUNING button

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency. Press again to cancel this mode.
If the input station falls outside of the receiver's tuning range, the display section will display a message: "UPPER" if the frequency is too high and "LOWER" if it is too low .

HITS (Hyper Intelligent Tuning System) button

Press this button, and search automatically begins up and down the frequency for stations that can be received. When a station that can be received is found, the search operation stops.

⑲ CUSTOM MEMO SEL button

Recall a genre name with this button.

⑳ SCAN button

Operate when the INPUT SELECTOR is set to TUNER. Station frequencies assigned to the STATION CALL buttons are tuned in, one after another, beginning with the current station no., for approximately 5 seconds each. The display section SCAN indicator will light. Press the button again and the tuner remains tuned in to the station playing when the button was pressed the second time.
Station frequencies not assigned station numbers in the memory are skipped.
When you have selected a CUSTOM MEMORY genre, memory scan is performed on the stations in that genre.

㉑ INPUT SELECTOR buttons

VCR 1: Press when performing playback on a first VCR unit.
VCR 2: Press when performing playback on a second VCR unit.
LD: Press when performing playback on a LD player.
TAPE 1/DAT: Press when performing playback on a DAT or cassette deck.
TAPE 2 MONITOR: Press when performing playback on a second cassette deck or second DAT and when monitoring recording.
CD: Press when playing compact discs on a CD player.
TUNER: Press when listening to radio broadcasts.
PHONO: Press when playing records on turntable.

㉒ TREBLE control buttons

Use to adjust the high-frequency level. Press the + button to increase the high-frequency level, and the – button to decrease it.
The TONE indicator appears on the display section.
When both buttons (+, –) of the TREBLE control are pressed simultaneously, the treble response will be set to the flat (normal) condition.

㉓ BASS control buttons

Use to adjust the low-frequency level. Press the + button to increase the low-frequency level, and the – button to decrease it.
The TONE indicator appears on the display section.
When both buttons (+, –) of the BASS control are pressed simultaneously, the bass response will be set to the flat (normal) condition.

㉔ ACOUSTIC buttons

MEMORY:
Pressing this button will result in the memorization of the sound quality (tone control condition). Press again to cancel this mode.

SELECT:
- This button is used to preset the five acoustic memories (A–E).
- This button is also used to recall previously set sound quality settings. Each time you press the button, the sound quality setting advances in the order shown below.

→ FLAT → LOUDNESS → A → B → C → D → E ┐

FLAT: For flat (normal) frequency response.
LOUDNESS: Emphasizes the low- and high- frequency ranges. Produces a fuller sense of sound, particularly when listening at low volume.
A–E: Memorized acoustic memory settings.

㉕ RETURN button

Press this button to return the receiver into the initial state. TUNER is selected at this initial state. Adjust the sound level by using the MASTER VOLUME control.

- TAPE 2 MONITOR ..... OFF
- SURROUND MODE ..... OFF
- MUTING .... OFF
- BALANCE .... CENTER
- FUNCTION .... TUNER
- STATION CALL .... 1 CH
- V-SIGNAL SELECTOR .... OFF
- TONE .... flat

When a station is not in 1 CH, stations are searched from 1 CH by the HITS function.

NOTE:
If no sound is output after the RETURN button is pressed, make sure that SPEAKERS buttons are turned on.

㉖ Surround INPUT BALANCE control

This knob is for adjusting the balance of the DOLBY PRO LOGIC SURROUND and DOLBY 3 CH LOGIC input signal. To adjust, apply a monaural sound signal and rotate until the rear sound becomes minimal.

㉗ REC SELECTOR button (VSX-51/VSX-4950S)

You can select the component to be recorded on TAPE 1/DAT, VCR1, VCR2 without using the INPUT SELECTOR.
REC SEL lights in the display section, indicating the selected component.

→ VCR 1* → VCR 2* → LD → TAPE 1* → CD
SOURCE ← PHONO ← TUNER ←

If you select SOURCE, the signal from the component selected with the INPUT SELECTOR is output from the recording jack.

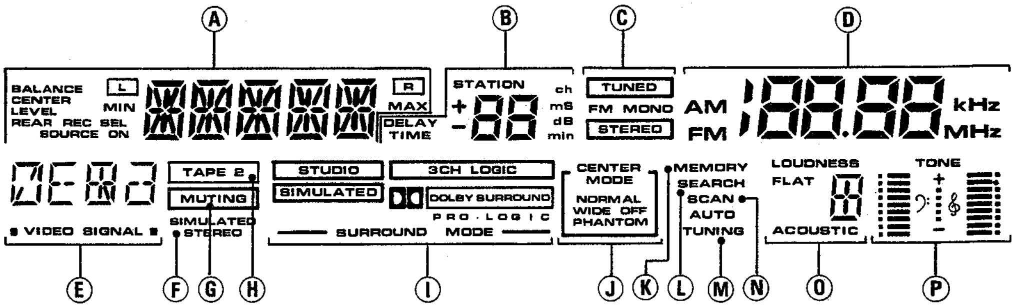
* You can record audio and video in the following ways.
From TAPE 1 on VCR 1 and 2, from VCR 1 on VCR 2 and TAPE 1, and from VCR 2 on VCR 1 and TAPE 1.
Do not select the component you wish to record on (for example, VCR 1), with the REC SELECTOR.

㉘ MULTI-ROOM & SOURCE button (VSX-51/VSX-4950S)

Use in combination with the separately sold MR-100 Multi-Room remote control unit.
When this button is on, the REC SELECTOR button operates as a sub-function selector. The selected sub-function's sound is output through SUB ROOM SPEAKERS, and the video signal is output through the MULTI-ROOM VIDEO OUT jack. If you install speaker systems connected to the SUB ROOM SPEAKERS terminals in a different room, you can enjoy different sources in two different rooms with a single main unit.

DISPLAY SECTION

* The illustration shows the VSX-51/VSX-4950S display section.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TAPE 2
MUTING
SIMULATED STEREO
VIDEO SIGNAL
STUDIO
SIMULATED
3CH LOGIC
DOLBY SURROUND
PRO·LOGIC
SURROUND MODE
CENTER MODE
NORMAL
WIDE OFF
PHANTOM
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Ⓐ CHARACTER/LEVEL/BALANCE display

- This displays the name of the component selected with the INPUT SELECTOR or REC SELECTOR (VSX-51/VSX-4950S).
- It also displays the level and balance settings during adjustment. During balance display, L and R light. During level display, MIN. and MAX light.

Ⓑ STATION/DELAY TIME/LEVEL/SLEEP TIME display

- Indicates the channel (ch) selected with the STATION CALL buttons.
- Indicates delay time (ms) when using SIMULATED or DOLBY PRO LOGIC SURROUND.
- Indicates rear level and center level (dB).
- Indicates sleep timer settings (min).

Ⓒ Tuning indicators

TUNED: Lights up when a station is tuned during TUNER operation.
FM MONO: Lights up when the FM MONO mode is selected with the FM MODE AUTO/MONO button.
STEREO: Lights up when a stereo FM broadcast is being received.

Ⓓ Frequency display

Ⓔ VIDEO SIGNAL display

Shows the video component selected with the V-SIGNAL SELECTOR button.

Ⓕ SIMULATED STEREO indicator

Ⓖ MUTING indicator

Flashes when MUTING is ON.

Ⓗ TAPE 2 indicator

Lights up when the INPUT SELECTOR is set to TAPE 2 MONITOR ON.

Ⓘ SURROUND MODE indicators

Ⓙ CENTER MODE indicators

These display the center mode (NORMAL, WIDE, PHANTOM, OFF) during DOLBY PRO LOGIC SURROUND and DOLBY 3CH LOGIC operation.

Ⓚ MEMORY indicator

Ⓛ SEARCH indicator

Ⓜ AUTO TUNING indicator

Lights up when in the auto tuning mode.

Ⓝ SCAN indicator

Lights up during memory scan operation.

Ⓞ ACOUSTIC display

Shows the setting of the ACOUSTIC MEMORY.

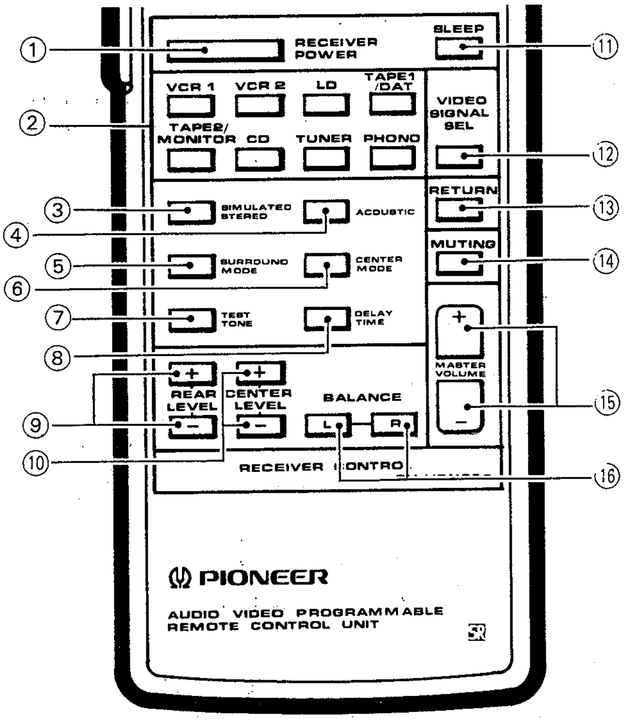
Ⓟ TONE level indicator

Shows the settings of the BASS and TREBLE buttons.

REMOTE CONTROL OPERATION (VSX-4900S, VSX-4950S, VSX-51)

The initial functions can operate all products compatible with PIONEER's common system remote control units marked with the symbol SR

RECEIVER CONTROL BUTTONS



① RECEIVER POWER button
Switches the receiver power between ON and STANDBY.

② Input selector buttons
Press when switching the receiver's INPUT SELECTOR.
The CONTROL MODE also switches to the same component (except PHONO) (One CONTROL MODE button lights)
Pressing TAPE 1/DAT, TAPE 2 MONITOR, causes the CONTROL MODE DECK II button to light.

③ SIMULATED STEREO button
When playing back a monaural source, press to switch the simulated stereo function ON/OFF.

④ ACOUSTIC select button
The acoustic setting changes in the following manner each time this button is pressed.

→ FLAT → LOUDNESS
E ← D ← C ← B ← A

⑤ SURROUND MODE button
The surround mode is switched in the following manner each time the button is pressed:

→ STUDIO → SIMULATED → OFF → DOLBY PRO LOGIC SURROUND
DOLBY 3CH LOGIC ←

⑥ CENTER MODE button
When DOLBY PRO LOGIC SURROUND or DOLBY 3CH LOGIC are ON, use to switch the center mode. (Refer to page 7.)

→ OFF → NORMAL → WIDE
PHANTOM ←

⑦ TEST TONE button
Use to adjust the test tone volume level from each speaker.
Operates when the DOLBY PRO LOGIC SURROUND or DOLBY 3CH LOGIC mode is selected.
When the test tone is switched ON, TEST is displayed in the display section, and the test tone is output through each speaker in turn for about two seconds. Adjust volume level so that it is the same from each speaker.

⑧ DELAY TIME button
During DOLBY PRO LOGIC SURROUND and SIMULATED operation, delay time settings can be changed from 16 ms to 30 ms in 2 ms steps.
The DELAY TIME button does not work with STUDIO and DOLBY 3 CH LOGIC.

⑨ REAR LEVEL (+, –) buttons
Adjusts the sound level of the rear speakers to the level of the front speakers.

⑩ CENTER LEVEL (+, –) buttons
Adjusts the center speaker sound level.

⑪ SLEEP timer button
Activates the SLEEP timer. The length changes in the following manner each time the button is pressed.

→ 90 → 60 → 30 → OFF

Unit: minutes

When SLEEP is ON, the display section is about half as bright as when SLEEP is OFF.

⑫ VIDEO SIGNAL SEL (SELECTOR) button
This switches just the video signal in sequence, leaving the sound unchanged.

→ VCR 1 → VCR 2 → LD → OFF

⑬ RETURN button
Press the RETURN button to return the receiver into the initial state. TUNER is selected at this initial state. Adjust the sound level by using the MASTER VOLUME buttons.

- TAPE 2 MONITOR...... OFF
- SURROUND MODE..... OFF
- MUTING .... OFF
- FRONT BALANCE .. CENTER
- FUNCTION .... TUNER
- STATION CALL .... 1 CH
- V-SIGNAL SELECTOR .... OFF
- TONE........................... flat

When a station is not in 1 CH, stations are searched from 1 CH by the HITS function.

NOTE:
If no sound is output after the RETURN button is pressed, make sure that SPEAKERS buttons are turned on.

⑭ MUTING button
Used to temporarily mute the sound.
The volume is restored when pressed again.

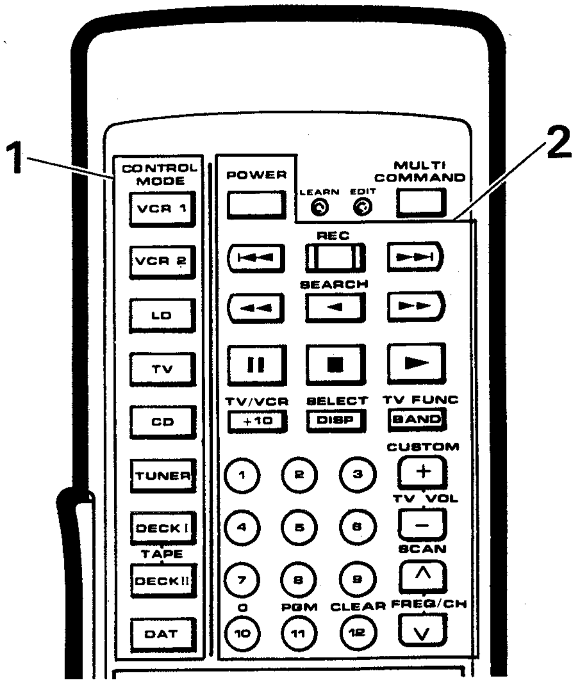
⑮ MASTER VOLUME (+, –) buttons
Adjusts the overall volume.

⑯ BALANCE (L, R) buttons
Adjusts the balance of the left and right speakers.

OPERATING OTHER COMPONENTS

REMOTE CONTROLLING OF ANY OTHER OF YOUR AUDIO-VISUAL COMPONENTS VIA THIS UNIT REQUIRES:

1. All components must be remote controllable (have a sensor window on the front panel) to receive direct command from this unit, upon successful learning of those commands by this programmable unit or,
2. All units must have remote control jacks (IN/OUT) on the rear panel and be correctly connected to the receiver according to the diagram on page 16.

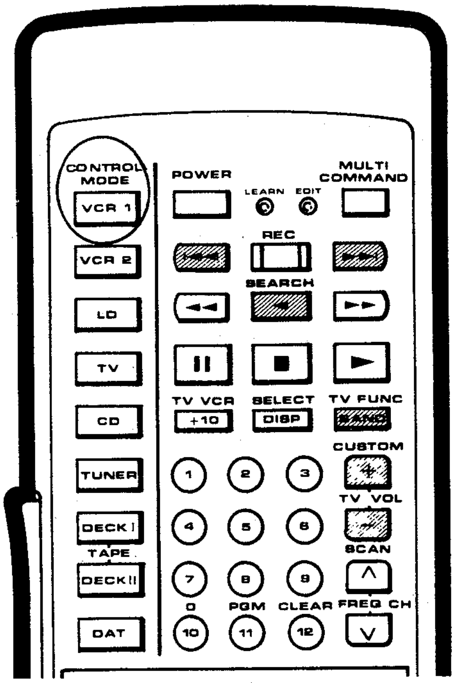

1
2
CONTROL MODE
VCR 1
VCR 2
LD
TV
CD
TUNER
DECK I
TAPE
DECK II
DAT
POWER
LEARN
EDIT
MULTI COMMAND
REC
SEARCH
TV/VCR
+10
SELECT
DISP
TV FUNC
BAND
CUSTOM
TV VOL
SCAN
0
PGM
CLEAR
FREQ/CH

When operating components other than the receiver:

1. **Press the CONTROL MODE buttons for the component you want to operate.**
2. **Press the operation button.**

▨ buttons do not operate in the selected CONTROL MODE.

VCR 1 operation


CONTROL MODE
VCR 1
VCR 2
LD
TV
CD
TUNER
DECK I
TAPE
DECK II
DAT
POWER
LEARN
EDIT
MULTI COMMAND
REC
SEARCH
TV VCR
+10
SELECT
DISP
TV FUNC
BAND
CUSTOM
TV VOL
SCAN
0
PGM
CLEAR
FREQ CH

(With VCR 2, even if you press an operation button, no signal is output. Preset or program and use)

POWER button:
Switches VCR power ON/OFF.

REC (REC) button:
Selects the recording mode.

◄◄ (REW) button:
Rewinds the tape and allows picture search.

►► (FF) button:
Rapidly advances the tape and allows picture search.

II (PAUSE/STILL) button:
Sets pause and still picture.

■ (STOP) button:
Stops tape transport.

► (PLAY) button:
Selects playback.

TV/VCR button:
This button can be used only for VCRs with a TV/VCR selector. Toggles the antenna output between TV and VCR.

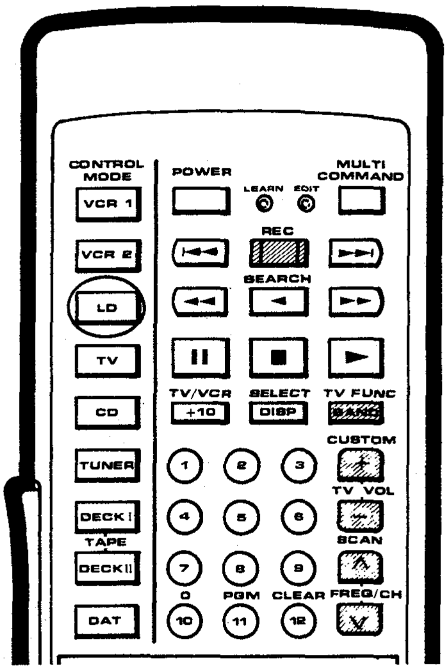
DISP (DISPLAY) button:
Switches TV screen display ON/OFF.

1–12 buttons:
Use to call up channels.

CH ∧ button:
Shifts channels in ascending order.

CH ∨ button:
Shifts channels in descending order.

LD player operation


CONTROL MODE
VCR 1
VCR 2
LD
TV
CD
TUNER
DECK I
TAPE
DECK II
DAT
POWER
LEARN
EDIT
MULTI COMMAND
REC
SEARCH
TV/VCR
+10
SELECT
DISP
TV FUNC
BAND
CUSTOM
TV VOL
SCAN
0
PGM
CLEAR
FREQ/CH
1
2
3
4
5
6
7
8
9
10
11
12

POWER button:
Switches LD player power ON/OFF.

|◀◀ (CHAPTER SKIP) button
Searches for the start of the chapter playing.

▶▶| (CHAPTER SKIP) button
Searches for the start of the next chapter.

SEARCH button:
Used for the search operation and for the memory repeat operation.

◀◀ (SCAN) button:
Selects fast backward.

▶▶ (SCAN) button:
Selects fast forward.

II (PAUSE) button:
Video and audio are stopped and playback is paused.

■ (STOP/EJECT) button:
Playback is stopped when pressed once. Pressing again causes the disc tray to come out.

▶ (PLAY) button:
Selects playback.

+10 button:
Use to input such information as chapter numbers higher than 10.

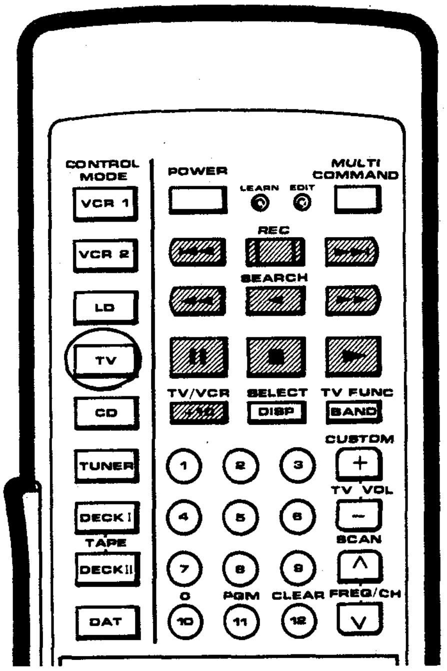
DISP (DISPLAY) button:
Switches TV screen display of chapter, frame/time number ON/OFF.

1–10 buttons:
Used for chapter and frame/time number search and for chapter program play.

PGM (PROGRAM) button:
Allows use of chapter program play.

CLEAR button:
Used for releasing repeat playback, number correction and mode release during search operation, and for releasing chapter program play.

TV operation


CONTROL MODE
VCR 1
VCR 2
LD
TV
CD
TUNER
DECK I
TAPE
DECK II
DAT
POWER
LEARN
EDIT
MULTI COMMAND
REC
SEARCH
TV/VCR
SELECT
DISP
TV FUNC
BAND
CUSTOM
+
TV VOL
−
SCAN
Λ
0
PGM
CLEAR
FREQ/CH
V
1
2
3
4
5
6
7
8
9
10
11
12

POWER button:
Switches the power of the TV ON/OFF.

DISP (DISPLAY) button:
TV image display ON/OFF.

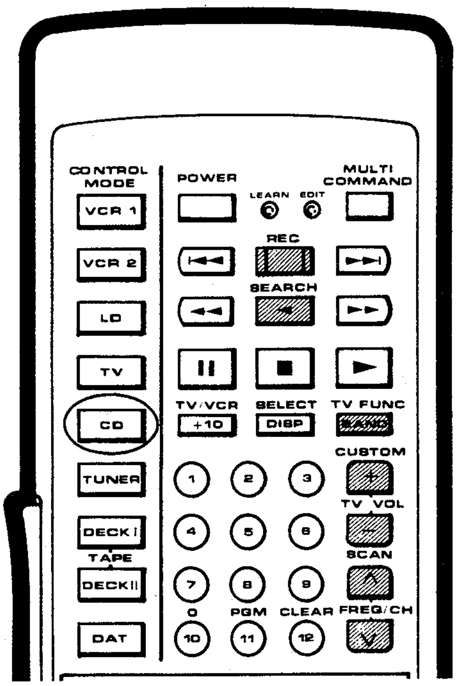
TV FUNC (TV FUNCTION) button:
Used to change the TV FUNCTION.
- The TV FUNC button cannot be used with some Pioneer TVs.

1–12 buttons:
Used to call up channels.

TV VOL (+, –) buttons:
Raises and lowers the volume.

CH Λ, V buttons:
Changes the channel in the direction of larger (Λ) and smaller (V) channel numbers.

CD player operation


CONTROL MODE
VCR 1
VCR 2
LD
TV
CD
TUNER
DECK I
TAPE
DECK II
DAT
POWER
LEARN
EDIT
MULTI COMMAND
REC
SEARCH
TV/VCR
+10
SELECT
DISP
TV FUNC
BAND
CUSTOM
+
TV VOL
−
SCAN
∧
0
PGM
CLEAR
FREQ/CH
∨
1
2
3
4
5
6
7
8
9
10
11
12

POWER button:
Switches CD player power ON/OFF.

|◄◄ (TRACK SEARCH) button:
Returns to the beginning of the track currently in playing.

►►| (TRACK SEARCH) button:
Advances to the next track.

◄◄ (MANUAL SEARCH) button:
Selects fast backward.

►► (MANUAL SEARCH) button:
Selects fast forward.

II (PAUSE) button:
Pauses playback.

■ (STOP) button:
Stops playback.

► (PLAY) button:
Selects playback.

+10 button:
Use when selecting a track number higher than 10. For example, to select 21, press the $\boxed{+10}$ button twice and then the $\boxed{1}$ button. This button cannot be used with some CD players.

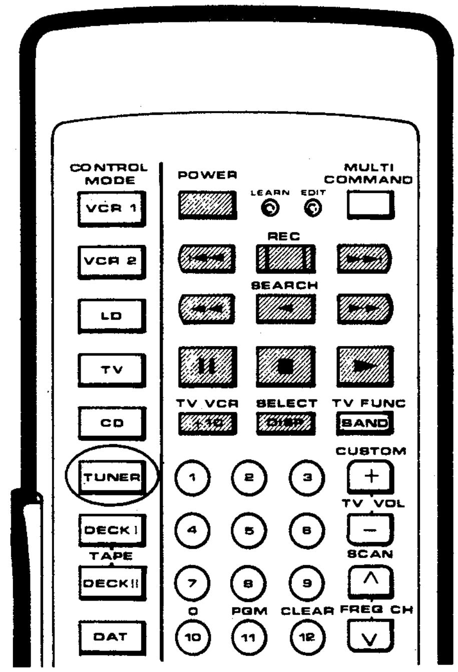
SELECT button:
Selects the DISC No. (1 to 6) for Multi-play CD players.

1−10 buttons:
For direct selection of a track or programming of tracks.

PGM (PROGRAM) button:
Press to program the CD player.

CLEAR button:
Erases a memorized program.

Tuner operation (The receiver tuner section can also be operated when TUNER is selected)


CONTROL MODE
VCR 1
VCR 2
LD
TV
CD
TUNER
DECK I
TAPE
DECK II
DAT
POWER
LEARN
EDIT
MULTI COMMAND
REC
SEARCH
TV VCR
+10
SELECT
DISP
TV FUNC
BAND
CUSTOM
+
TV VOL
−
SCAN
∧
0
PGM
CLEAR
FREQ CH
∨
1
2
3
4
5
6
7
8
9
10
11
12

1−12 buttons:
For recall of tuner presets.
Buttons 1 to 10 are used for the receiver (Buttons 11 and 12 cannot be used).

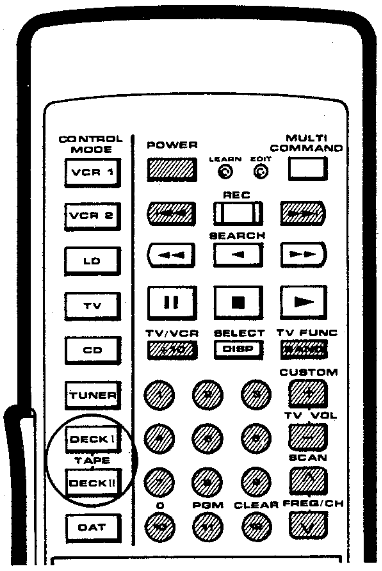
BAND button:
Switches the FM and AM bands in turn.

CUSTOM button:
Press when you want to recall a custom memory genre name.

SCAN button:
Press when you want to operate memory scan.
If you press this button after pressing the CUSTOM button to display custom memory genre names, such as ROCK and JAZZ, the STATION CALL NO.s of the selected genre name will be scanned.

FREQ ∧, ∨ buttons:
Shifts the frequency up (∧) and down (∨).

DECK I, II operation


CONTROL MODE
POWER
MULTI COMMAND
LEARN
EDIT
VCR 1
VCR 2
REC
SEARCH
LD
TV
TV/VCR
SELECT
TV FUNC
DISP
CD
CUSTOM
TUNER
TV VOL
DECK I
TAPE
DECK II
SCAN
0
PGM
CLEAR
FREQ/CH
DAT

When using a single cassette deck, select DECK II.

REC **(REC) button:**
Selects the recording or recording standby mode.

◄◄, ►► (FF) buttons:
Rapidly advances the tape in the direction of the arrow.

◄ **(PLAY) button:**
Selects reverse playback.

II **(PAUSE) button:**
Temporarily stops tape transport. Press again to resume tape transport.

■ **(STOP) button:**
Stops the tape transport.

► **(PLAY) button:**
Selects forward playback.

SELECT button:
Selects the cassette No. (1 to 6) for multi-cassette changer.

DAT (Digital Audio Tape deck) operation

POWER:
Switches DAT deck power ON/OFF.

REC **(REC)**: Selects the recording mode.

◄◄ **(REW)**: Rewind.

►► **(FF)**: Fast forward.

II **(PAUSE)**: Temporarily stops tape transport. Press again to resume tape transport.

■ **(STOP)**: Stops the tape transports.

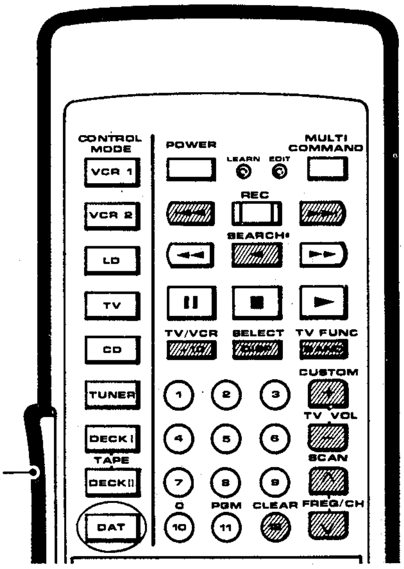
► **(PLAY)**: Playback.

1–10: 1 to 10: Use to input numbers.

PGM: Use to playback a program.

MODE CHECK button

When you press the MODE CHECK button, the button for the present CONTROL MODE (for example, LD) lights. If you continue pressing the button, the CONTROL MODE changes in sequence.


CONTROL MODE
POWER
MULTI COMMAND
LEARN
EDIT
VCR 1
VCR 2
REC
SEARCH
LD
TV
TV/VCR
SELECT
TV FUNC
CD
CUSTOM
TUNER
1
2
3
TV VOL
DECK I
4
5
6
TAPE
SCAN
DECK II
7
8
9
0
PGM
CLEAR
FREQ/CH
DAT
10
11

MODE CHECK button